THE DEFENSE PROGRAM AND THE ECONOMY

HEARINGS

BEFORE THE

SUBCOMMITTEE ON ECONOMIC GOALS AND INTERGOVERNMENTAL POLICY

OF THE

JOINT ECONOMIC COMMITTEE
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NINETY-SEVENTH CONGRESS

FIRST AND SECOND SESSIONS

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OCTOBER 7, 13, 22, AND 29, 1981, AND DECEMBER 15, 1982

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[1] Representative Richmond resigned from the U.S. House of Representatives on Aug. 25, 1982, and Representative Augustus F. Hawkins, of California, was subsequently appointed to the committee on Sept. 23, 1982.

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THE DEFENSE PROGRAM AND THE ECONOMY

WEDNESDAY, OCTOBER 7, 1981

Congress of the United States,
Subcommittee on Economic Goals and
Intergovernmental Policy of the
Joint Economic Committee,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2218, Rayburn House Office Building, Hon. Henry S. Reuss (chairman of the full committee) presiding.

Present: Representative Reuss.

Also present: James K. Galbraith, executive director; Richard F. Kaufman, assistant director-general counsel; and Chris Frenze, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE REUSS, CHAIRMAN OF THE FULL COMMITTEE

Representative Reuss. Good morning. The subcommittee will be in order for a consideration of the inflationary effects of the increase in defense spending, an increase unprecedented in terms of the amount of dollars involved.

According to official estimates, defense spending will be more than double over the next 5 years, from $160 billion to $341 billion. Some experts believe that the actual costs of defense could be much higher because of overoptimistic assumptions about the rate of inflation.

Critics of the administration's program charge that the defense buildup will add to inflationary pressures, will run into resource constraints and cause bottlenecks in key sectors of the defense industry, will cause shortages of skilled workers, and will add to Federal deficits.

Many people are concerned about the change in national priorities from the civilian to the military sector.

The purpose of these hearings is to inquire into the consequence of defense buildup to the national economy. So far, there have been many criticisms and responses, charges and countercharges. We hope to provide the basis for more informed discussions and debate of the economic issues.

We are pleased to have before us this morning the Honorable Murray L. Weidenbaum, Chairman of the Council of Economic Advisers. Mr. Weidenbaum brings a great fund of knowledge and expertise on these issues to the subcommittee. His credentials, in addition to being spokesman for the administration, include experience in the private sector as an economist for one of the large aerospace companies and the author of many works on the subject, including his book, "The Economics of Peacetime Defense."

At this point, I will include, in the hearing record, the written opening statement of Senator Paula Hawkins, who will be unable to attend today's hearing.

[The written opening statement of Senator Hawkins follows:]

WRITTEN OPENING STATEMENT OF HON. PAULA HAWKINS

ONCE AGAIN, MR. WEIDENBAUM, WELCOME TO THE JOINT ECONOMIC COMMITTEE.

I THINK THAT OUR DEFENSE INDUSTRY IN GENERAL, AND OUR SMALL STRATEGIC INDUSTRIES IN PARTICULAR, ARE PAYING NOW FOR THE POOR CAPITAL FORMATION POLICIES OF THE PAST.

OUR MANUFACTURING PLANTS ARE AGING AND NEED TO BE MODERNIZED, OUR MACHINE TOOL INDUSTRY NEEDS REJUVENATION TO WITHSTAND FOREIGN COMPETITION. IT IS ESPECIALLY ALARMING THAT OUR INDUSTRIAL BASE IS BECOMMING INCREASINGLY DEPENDENT UPON FOREIGN MACHINE TOOLS. IN A TIME OF NATIONAL EMERGENCY THIS COULD CAUSE SEVERE PRODUCTION PROBLEMS AND SERIOUSLY THREATEN OUR NATIONAL SECURITY.

FORTUNATELY, AWARENESS OF THIS PROBLEM IS GROWING. DURING NOVEMBER OF LAST YEAR, THE HOUSE ARMED SERVICES COMMITTEE HELD A SERIES OF HEARINGS DEALING WITH THIS VERY CRITICAL ISSUE. IN THE REPORT ISSUED AFTER THESE HEARINGS, THE COMMITTEE STATES:

"AS THE INVESTIGATION PROCEEDED, A SHOCKING PICTURE EMERGED: THE PICTURE OF AN INDUSTRIAL BASE CRIPPLED BY

DECLINING PRODUCTIVITY GROWTH, AGING FACILITIES AND MACHINERY, SHORTAGES IN CRITICAL MATERIALS, INCREASING LEAD TIMES, SKILLED LABOR SHORTAGES, INFLEXIBLE GOVERNMENT CONTRACTING PROCEDURES, INADEQUATE DEFENSE BUDGETS AND BURDENSOME GOVERNMENT REGULATIONS AND PAPERWORK.

"WITNESS AFTER WITNESS TESTIFIED BEFORE THE PANEL THAT AN EROSION OF U.S. INDUSTRIAL CAPABILITY IS OCCURRING THAT, COUPLED WITH AMERICA'S MUSHROOMING DEPENDENCE ON FOREIGN SOURCES FOR MINERALS, IS ENDANGERING OUR DEFENSE POSTURE AT ITS VERY FOUNDATIONS."

THERE IS A CLOSE LINK BETWEEN A STRONG ECONOMY AND A STRONG DEFENSE. I FULLY SUPPORT THE AIM OF IMPROVING AMERICA'S DEFENSES. HOWEVER, WE MUST ALSO UNDERSTAND THAT NATIONAL SECURITY DEPENDS UPON INDUSTRIAL STRENGTH. WE MUST UPGRADE OUR INDUSTRIAL BASE IF WE ARE TO IMPROVE OUR NATIONAL SECURITY.

Representative Reuss. Mr. Weidenbaum, you're very welcome and your prepared statement will be printed in full in the hearing record. You may now proceed as you wish, sir.

STATEMENT OF HON. MURRAY L. WEIDENBAUM, CHAIRMAN OF THE COUNCIL OF ECONOMIC ADVISERS

Mr. Weidenbaum. Thank you, Mr. Chairman. It is a great pleasure to be back before this subcommittee of the Joint Economic Committee and, as you know and have stated, the topic of today's hearing has been one of my personal longstanding professional interests so I would like to give you the highlights of my prepared statement and look forward to your inquiries.

As you stated, I have worked in the aerospace industry and have done quite a bit of writing on the subject of defense spending, so my views extend beyond those of a Government official called to testify on an important current topic.

Today, of course, there is a great deal of concern about both the state of the economy and the state of our national defense. That concern is reflected in this administration's commitment to restore the health of the American economy and to insure that our military strength is adequate to the challenges of the 1980's—and beyond. A number of critics argue that these two goals are not compatible. I want to emphasize that I believe they both can be achieved, and that we have embarked on the appropriate road to achieve them. To support my belief I want to offer four points for your consideration today.

NO DOVES IN REAGAN ADMINISTRATION

First, as I have said before in other places, there are no doves in this administration. Our goal is to achieve a very substantial growth in real defense expenditures between now and 1986. Although recent attention has been focused on cuts in military spending, please remember that these are only reductions in the projected growth rate of defense spending. Even after taking these so-called cuts into account, total budget authority for Defense Department programs is scheduled to increase by 21 percent from fiscal 1981 to fiscal 1982, a real growth of 11 percent. Measured from fiscal 1980, this is a dollar increase of $71 billion in just 2 years—a generous increase by any standard, as the chairman pointed out in his introductory remarks. Of course, the administration will be constantly reviewing all Government spending programs, so no budget figure can be regarded as engraved in stone until the fiscal year has ended. Still, I believe that it is fair to say that the President's commitment to strengthening our military preparedness is plain for all to see.

INFLATIONARY IMPACT OF THE DEFENSE BUDGET

Second, with regard to the inflationary impact of the defense budget, let me remind you that inflation—a rise in the general price level—is a product of overall fiscal and monetary policies. It is frequently argued, and I have made the point myself before this very subcommittee, that defense spending during the Vietnam war was inflationary. But what made that spending inflationary was not that the funds were used to purchase weapons and manpower for our war effort, but that the level of spending was not reduced elsewhere—and that monetary policy was deliberately expansionary. However, in the current circumstances, the overall stance of macroeconomic policy is not inflationary.

Third, in the very short run, it is possible for defense spending to contribute to inflationary pressures and we must acknowledge this. This can happen when prices in the economy are slow to adjust to a relative shift in the economy's pattern of demand away from civilian products and toward defense production. This may happen primarily where overly rapid and unforeseen growth in defense requirements creates bottlenecks in the supplying industries. Our program does create a major expansion in defense procurement, but it is a long-term expansion, and it can be foreseen and planned for in the private sector. Thus, I believe the dangers on this score have been overstated.

Finally, the military buildup, together with an improved economy and a declining pool of 18-year-olds, may put significant pressure on the all-volunteer military. Although the demand for high quality recruits will be increasing at the same time that the supply is falling, I am confident that prudent policies can be designed to solve our military personnel problems. This administration strongly opposes a peacetime draft, and therefore supports efforts to keep military compensation at adequate levels.

THE NEED FOR STRONGER DEFENSE

I do not pretend to be an expert on military strategy. I am an economist whose life is devoted to calculations of costs and benefits. National defense is not easily subjected to such calculations, so that my testimony on our needs must be more the feelings of an interested and concerned layman when I talk about military needs. After all, there is no rule that tells us the optimal spending level for national defense. If we go about it efficiently, the more we spend, the more secure we will be. At the same time, beyond some point, the sacrifices we make for national defense may outweigh the gain from increased defense. This is a kind of cost-benefit calculation, but it is one made in terms of value judgments, not in terms of dollar prices.

On the subject of the military budget, I am in complete harmony with the President and other members of the administration. First, in order to minimize the risk of a fatal confrontation with the Soviet Union, we must restore the credibility of our military strength. Beyond that, I believe the United States must be prepared to face the new strategic concerns that have come to the fore in the last decade, in particular the recognition of the free world's dependence on precarious energy supplies.

I do not believe that we have moved measurably toward these goals in the recent past. From the Vietnam war we inherited a legacy of neglect of our military that cannot be continued. This Nation's goals very clearly require increased attention to our military needs.

Although the right level of defense expenditures is a political, not an economic question, it is possible to demonstrate with elementary economic statistics the neglect that I am referring to. In 1972 we devoted about 7 percent of our GNP to defense, down sharply from the Vietnam peak of about 9¼ percent. In 1980 the share was only about 5¼ percent. Over this period, expenditures grew from $75 billion to about $133 billion, an annual rate of increase of 7½ percent. As an indication why, looking at the unadjusted dollars is not adequate for analysis. This growth was not fast enough to keep up with inflation in the prices of defense goods and services. Although real spending on defense grew between 1976 and 1980, the 1980 level was still 5½ percent below the level in 1972 in constant dollars, which was well after the peak of the Vietnam buildup. Meanwhile, the military shifted to an All-Volunteer Force, paying higher salaries for the same manpower services. The inescapable conclusion is that we have been buying less defense in real terms than we did a decade ago. We have been devoting a markedly smaller share of our economy to national security.

The President's budget for defense will restore some of this lost capability. Outlays in fiscal 1984 are projected to be a little over $240 billion, just over 6 percent of GNP. The magnitude of this fraction does not suggest a headlong militarization of the economy or a runaway budget for defense. At the same time, enhanced military preparedness will certainly involve costs. At a time of reduced growth in the Federal budget, growth in the defense share will involve sacrifices in nondefense spending. As we painfully learned during Vietnam, you cannot have everything—guns and butter—and fat.

How much sacrifice? Frankly, it is hard to say exactly. The current round of budget paring, like the first initiatives of the administration, represents a broad policy view, only part of which relates to defense. It is widely understood that the Federal Government has gotten out of hand—some would say out of control. Thus, we are compelled to reduce the growth of nondefense spending merely to live within our means. The overriding goals must be to reduce inflation and restore economic growth, and this can only be achieved when we begin to get the Federal budget under more effective control. The revenues and outlays of the Government can vary quite dramatically in response to changes in economic conditions, and even to changes in expectations about economic conditions. In order to convince the public that we are determined to live within our means, we must keep continued pressure on the spending of all departments.

We must assure ourselves that the Defense Department's spending, like everyone else's, is not wasteful. While there are no plans at the present time to make further cuts in defense spending, I can assure you that if conditions were to arise which require such cuts, they would not be made at the cost of weakened readiness. Thus, although the administration will not sacrifice its priorities, the entire budget will always remain open to scrutiny so that we can be sure budget choices reflect the rational cost and benefit calculations mentioned earlier.

At this point I would like to reemphasize an important fact in this administration's overall budget priorities: we are not increasing military outlays, when measured as a share of total budget outlays, at the expense of social safety net programs. In fact, compared to the early 1960's, safety net outlays, as a share of the budget, will be considerably larger as I note in table I of my prepared statement. Nor will that share decline when measured against the 1981 budget.

IS THE DEFENSE BUDGET INFLATIONARY?

A few analysts have suggested that the President's plan for increasing defense spending is inflationary. I think that argument has been pretty well laid to rest by now. Still, it is a line of argument that may reappear in the future, so I would like to review it with you. The argument that our defense plans are inflationary is quite simplistic. The critics simply note that rapid defense buildups have, in the past, been inflationary. Obviously, the most notorious was the Vietnam buildup. "So," the critics asked, "What's so different about this buildup?" They generally do not take the time to answer this question, perhaps because the answer refutes their position.

Past defense buildups, and especially the Vietnam buildup, had two characteristics that are missing from the current buildup. It is these two features that led to inflationary consequences then, and that will avoid them now. First, past buildups were surprises. They were sudden shifts—or attempts at bringing about sudden shifts—in the pattern of resource utilization in the economy. This type of hasty reallocation causes bottlenecks and inefficiencies in the defense sector and results in temporarily higher relative prices and costs in those industries, as well as affecting nondefense industries that are bidding for similar materials, equipment, and skilled manpower. If prices are not quickly reduced in the nondefense industries, the short-term consequence is inflation.

In the long run, inflation is caused by excessive growth in money and credit. Furthermore, inflation offers an expedient way for the Government to finance a military buildup because it is, in effect, an unlegislated tax on the economy. Finally, in Vietnam it was the explicit goal of the administration to attempt to avoid sacrificing private consumption for public consumption. The inevitable result was that military spending was inflationary because inflation was politically expedient.

As should be clear by now, the President's program is the antithesis of this approach in every way. First, the expansion of defense production is not an unplanned surprise, but rather a gradual planned buildup over several years. If Vietnam was a front-loaded expansion, the current military buildup is the reverse—the largest increases in outlays come in the outyears. Second, the heart of the President's program emphasizes reduction in the growth of money and credit as well as the elimination of deficit spending. The consequence is that the administration's military budget will not be inflationary.

COMPOSITION OF MILITARY SPENDING IN PROCUREMENT AND MANPOWER

I want to address the composition of military spending in procurement and manpower because the buildup is large, and will require continued monitoring. I will discuss these matters in a moment. For now, it should suffice to compare the administration's defense plans with the pattern of spending during the Vietnam war to lay comparisons to rest. During the Vietnam buildup, which was of course unforeseen, the share of Government purchases for national defense rose from an initial base of 7 percent of GNP to 9¼ percent in roughly 2 years. That raised the defense share of GNP by 2 percentage points, as shown in table II of my prepared statement.

In comparison, over the 2 years 1980–82, the defense share of GNP will increase by less than one-third of that, a modest one-half percentage point. Ultimately, the proposed defense buildup involves a share increase of only 1¾ points and that takes place over the course of 6 years, 1980–86. And perhaps most significantly, 7 percent in 1986 will be essentially equal to the share of national defense in GNP at the very beginning of the Vietnam buildup.

In contrast to the Vietnam experience, the current planned pattern of buildup over the next 6 years is smooth and moderate, although it does reach high absolute levels by the end of the period. In fact, even now the buildup is very old news. In last autumn's presidential election, both candidates made it clear that military spending needed to be increased dramatically, and the swansong budget of the Carter administration reflected a new and belated commitment to that goal.

Now let's get right to the heart of the matter. Today it is recognized in every corner of the economics profession that long-term inflation is solely the result of the excessive growth of money and credit. For an increase in defense spending to result in anything more than a transitory increase in the price level, that spending must be accompanied by monetary accommodation and not be offset by reduced spending in other parts of the budget. Such an approach is just not in the cards. We are firmly committed to a reduction in the growth of the Federal budget and to reduced growth of money and credit. We recognize that the temptation to inflate the economy to pay for the public sector is foolish and eventually self-defeating.

PROCUREMENT AND "SECTORAL INFLATION"

The expected expansion of military procurement will not overload industries so long as it is well anticipated and so long as alternative demands on their capacity are not excessive. The volume of defense work in industry today is still less than 60 percent of the Vietnam peak. And it is actually less than in all but 3 years between 1952 and 1973. Of equal importance, the overall size of the industrial economy is today much larger than in that earlier period. In the key industries of fabricated metals, machinery, vehicles, aerospace, shipbuilding, and instruments, the level of output in 1980 was 2.2 times that of 1960.

I noticed this morning that the production of defense and space equipment, according to the Federal Reserve's own data, is just about the same as it was in 1967, whereas the total volume of industrial production is up by more than one-half.

Over the next 5 years the volume of defense work will rise fairly steadily to about 50 percent more than the 1968–69 benchmark—which will not be passed until 1984. In the fifth year, procurement will be 2 percent of expected GNP. Even if a critic went to the unrealistic extent of assuming absolutely no growth in the economy in the next 5 years, the ratio of defense procurement to GNP would not exceed the 2½ percent Vietnam peak.

I would emphasize again the importance of the increase in military procurement being expected. The Services must be able to project accurately when they plan to take deliveries in major programs. The Department of Defense must minimize program adjustments and specification changes as the programs move along. And the Department needs to keep contractors well informed of its longer term plans. Plans to shift to greater reliance on multiyear contracts will provide a significant step toward efficiency and an insurance against bottlenecks. At the same time, the Department is moving to inform contractors and other government agencies of the probable volumes and distributions of industrial activity needed to meet its multiyear procurement program. This effort needs to be enhanced in a manner consistent with the need for necessary secrecy. The Department, the rest of the Government, and American industry, all need, as a management tool, clear information on the broad scale and pattern of procurement.

Despite the comforting tone of much of what I have to say about the industrial aspect of our defense program, there are potential problems for which we have to be alert. We cannot know far ahead exactly what private demands will be on particular industries that are also important defense suppliers. It has been known for some time that civilian and military aircraft production would both rise in the mid-1980's. But, so far, there are no clear signs of likely bottlenecks in aerospace and miscellaneous transportation was a modest 77.6 percent, significantly below the previous year—August 1980 was 84.5—and quite a bit below the last peak, November 1979, when the peak was 92.1 percent.

Besides more precise information on defense planning for production, we need to be alert to the pitfalls of major aerospace—or other—projects involving a great deal of new technology. As such projects move from initial conception to final design and production, we frequently find that the real resource cost to solving all of the technical problems exceeds expectations. We should therefore look in our planning for some margin of safety in industrial capacity as we plan for entirely new programs. The value of doing so obviously adds to the value of careful planning and tracking of program progress by the Defense Department and contractors.

MILITARY MANPOWER

Another area of concern is military manpower. Today, our forces are in good shape. All the services are now filling their recruiting quotas with high quality men and women. Reenlistments are occurring at record levels. Although there are shortages of senior enlisted personnel, these may soon be eliminated as the present group of junior NCO's completes their tours of duty and reenlist.

Unfortunately, problems in keeping the armed services up to strength may arise as the President's economic recovery program begins to take effect. Declines in unemployment will mean stiffer competition for the miltary in attracting personnel away from civilian jobs. A highly skilled technician who decides to reenlist in today's weak labor markets may have second thoughts in a few years when we expect the economy to be expanding rapidly.

The problem of attracting sufficient manpower is likely to be especially serious for first-term recruits. Between now and 1987, the Services expect to increase their active duty forces significantly. Unlike other employers, the military cannot generally use workers who have learned their skills in other jobs. When the military expands, it must do so from the bottom up. Although some of the increase in force levels can be achieved by higher reenlistment rates, most of it will have to come by increasing the number of recruits.

Over the next 2 years, the military's demand for recruits will be rising in terms of quality as well as quantity. In the past few years, critics of the all-volunteer military have charged that some of our soldiers and sailors do not have the education or aptitude needed to do their jobs. In response to these charges, Congress has placed statutory minimums on the percentages of recruits who must be at least high school graduates and who must score well on the Armed Forces Qualification Test. These minimums will rise for the next 2 years. Thus, the military will have to recruit larger numbers of men and women from a smaller portion of the youth population.

This increase in demand will be exacerbated by a decline in supply. Between now and the end of the decade, the population of 18-year-olds will fall by 18 percent. As table III of my prepared statement shows, the number of male 18-year-olds will fall from 2.1 million today to 1.7 million in 1990, with the bulk of that decline between now and 1985. Thus, the armed services will need to attract a considerably higher percentage of young high school graduates than it does today.

Although a considerably smaller population supported a somewhat larger military during the peacetime years of the 1950's, the United States had a draft in these years. The combination of factors I have mentioned—declining unemployment rates, rising numbers and quality of recruits, and declining youth population—will produce a severe test for the all-volunteer military. At the same time that the potential supply of recruits will be falling, the demand for them, especially for high quality recruits, will be rising. Unless we choose the right combination of incentives, the military compensation budget may rise sharply while shortages of recruits create pressures for a return to a peacetime draft.

ADMINISTRATION STRONGLY SUPPORTS THE CONCEPT OF AN ALL-VOLUNTEER MILITARY

Military personnel problems are cause for concern, but they are not cause for alarm. This administration strongly supports the concept of an all-volunteer military. I am confident that, with a properly designed military pay system and other necessary adjustments, we will be able to attract sufficient numbers of high quality recruits, maintain our career force at desired strength, fill existing gaps in certain skill categories, and still keep budgetary costs within reasonable bounds. The military pay raise scheduled for October 1, and about to be passed by Congress, will help meet these goals. It is important that the military pay structure be viewed as a way of attracting and retaining military personnel whose skills are in short supply. Therefore, flexibility is desirable in designing and administering pay and benefit changes.

To insure that we can continue the success of the all-volunteer military in the future, the administration is currently studying all aspects of military manpower policy. An outstanding expert in these matters, Lawrence Korb, Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, is heading an interagency working group which will report its findings to a Presidential task force of which I am pleased to be a member. We hope to have policy recommendations which will be designed to keep our military forces strong while avoiding the inequities and restrictions on personal freedom imposed by a draft.

In the long run we must recognize the need to bolster the services' ability to compete in labor markets for new recruits and new skills.

In conclusion, achieving appropriate balance between the needs of national security and the pressures of other priorities is as important as it is difficult. Policymakers have faced this conflict since time immemorial. The Irish economist, C. F. Bastable, described the problem at the turn of the century in words that are as relevant today as they were several thousand years ago:

> * * * to maintain a due balance between the excessive demands of alarmists and military officials, and the undue reduction in outlay sought by the advocates of economy, is one of the difficult tasks of the statesman.

Thank you.

Representative REUSS. Thank you for your very thorough and comprehensive testimony, Mr. Weidenbaum.

[The prepared statement of Mr. Weidenbaum follows:]

PREPARED STATEMENT OF HON. MURRAY L. WEIDENBAUM

Mr. Chairman and members of the Committee:

Thank you for inviting me to appear before you today to discuss defense spending and the economy. The topic has been one of my long-standing professional interests. I have worked in the aerospace industry and written numerous books and articles on the topic of defense spending, so the depth of my views extends beyond that of a government official called to testify on an important topic of current national policy.

Today there is a great deal of concern about both the state of the economy and the state of our national defense. That concern is reflected in this Administration's commitment to restore the health of the American economy and to ensure that our military strength is adequate to the challenges of the 1980s - and beyond. A number of critics argue that these two goals are not compatible. I want to emphasize that I believe they both can be achieved, and that we have embarked on the appropriate road to achieving them. To support my belief I want to offer four points for your consideration today.

First, as I have said before in other places, there are no doves in this Administration. Our goal is to achieve a very substantial growth in real defense expenditures between now and 1986. Although recent attention has been focused on cuts in military spending, please remember that these are only reductions in the projected growth rate of defense spending. Even after taking these so-called cuts into account, total budget authority for Defense Department programs is scheduled to increase by 21 percent from fiscal

1981 to fiscal 1982, real growth of 11 percent. Measured from fiscal 1980, this is a dollar rise of $71 billion in just two years -- a generous increase by any standard. Of course, the Administration will be constantly reviewing all government spending programs, so no budget figure can be regarded as engraved in stone until the fiscal year has ended. Still, I believe that it is fair to say that the President's commitment to strengthening our military preparedness is plain for all to see.

Second, with regard to the inflationary impact of the defense budget, let me remind you that inflation -- a rise in the general price level -- is a product of overall fiscal and monetary policies. It is frequently argued, and I have made the point myself, that defense spending during the Vietnam War was inflationary. But what made that spending inflationary was not that the funds were used to purchase weapons and manpower for our war effort, but that the level of spending was not reduced elsewhere -- and that monetary policy was deliberately expansionary. However, in the current circumstances, the overall stance of macroeconomic policy is not inflationary.

Third, in the very short run it is possible for defense spending to contribute to inflationary pressures. This can happen when prices in the economy are slow to adjust to a relative shift in the economy's pattern of demand away from civilian products and toward defense production. This may happen primarily where overly rapid and unforeseen growth in defense requirements creates bottlenecks in the supplying industries. Our program does create a major expansion in defense procurement, but it is a long-term expansion, and it can be foreseen and planned for in the private sector. Thus, I believe the dangers on this score have been overstated.

Finally, the military buildup, together with an improved economy and a declining pool of 18-year olds, may put significant pressure on the All Volunteer Military. Although the demand for high quality recruits will be increasing at the same time that the supply is falling, I am confident that prudent policies can be designed to solve our military personnel problems. This Administration strongly opposes a peacetime draft, and therefore supports efforts to keep military compensation at adequate levels.

The Need for Stronger Defense

I do not pretend to be an expert on military strategy. I am an economist whose life is devoted to calculations of costs and benefits. National defense is not easily subjected to such calculations, so that my testimony on our needs must be more the feelings of an interested and concerned layman. After all, there is no rule that tells us the optimal spending level for national defense. If we go about it efficiently, the more we spend, the more secure we will be. At the same time, beyond some point, the sacrifices we make for national defense may outweigh the gain from increased defense. This is a kind of cost-benefit calculation, but it is one made in terms of value judgments, not in terms of dollar prices.

So what do I believe? I am in complete harmony with the President and other members of the Administration. First, in order to minimize the risk of a fatal confrontation with the Soviet Union, we must restore the credibility of our military strength. Beyond that, I believe the United States must be prepared to face the new strategic concerns that have come to the fore in the last decade, in particular the recognition of the free world's dependence on precarious energy supplies.

I do not believe that we had moved measurably toward these goals in the recent past. From the Vietnam War we inherited a legacy of neglect that cannot be continued. This nation's goals very clearly require increased attention to our military needs.

Although the right level of defense expenditures is a political, not an economic, question, it is possible to demonstrate with elementary economic statistics the neglect that I am referring to. In 1972 we devoted about 7 percent of our GNP to defense, down sharply from the Vietnam peak of about 9-1/4 percent. In 1980 the share was only about 5-1/4 percent. Over this period, expenditures grew from $75 billion to about $133 billion, an annual rate of increase of 7-1/2 percent. This was not fast enough, however, to keep up with inflation in the prices of defense goods and services. Although real spending on defense grew between 1976 and 1980, the 1980 level was still 5-1/2 percent below the level in 1972 in constant dollars, well after the peak of the Vietnam buildup. Meanwhile, the military shifted to an all-volunteer force, paying higher salaries for the same manpower services. The inescapable conclusion is that we have been buying less defense in real terms than we did a decade ago. We have been devoting a markedly smaller share of our economy to national security.

The President's budget for defense will restore some of this lost capability. Outlays in fiscal 1984 are projected to be a little over $240 billion, just over 6 percent of GNP. The magnitude of this fraction does not suggest a headlong militarization of the economy or a runaway budget for defense. At the same time, enhanced military preparedness will certainly involve costs. In a time of reduced growth in the Federal budget, growth in the defense share will involve sacrifices in nondefense spending. As we painfully learned during Vietnam, you cannot have everything -- guns and butter -- and fat.

How much sacrifice? Frankly, it is hard to say exactly. The current round of budget paring, like the first initiatives of the Administration, represents a broad policy view, only part of which relates to defense. It is widely understood that the Federal government has gotten out of hand -- some would say out of control. Thus, we are compelled to reduce the growth of nondefense spending merely to live within our means. The over-riding goals must be to reduce inflation and restore economic growth, and this can only be achieved when we begin to get the Federal budget under more effective control. The revenues and outlays of the government can vary quite dramatically in response to changes in economic conditions, and even to changes in expectations about economic conditions. In order to convince the public that we are determined to live within our means, we must keep continued pressure on the spending of all departments.

We must assure ourselves that the Defense Department's spending, like everyone else's, is not wasteful. While there are no plans at the present time to make further cuts in defense spending, I can assure you that, even if conditions were to arise which required such cuts, they will not be made at the cost of weakened readiness. Thus, although the Administration will not sacrifice its priorities, the entire budget will always remain open to scrutiny so that we can be sure budget choices reflect the rational cost and benefit calculations mentioned earlier.

At this point I would like to re-emphasize an important fact in this Administration's overall budget priorities: we are not increasing military outlays, when measured as a share of total budget outlays, at the expense of social safety net programs. In fact compared to the early 1960's, safety net outlays, as a share of the budget, will be considerably larger (See Table I). Nor will that share decline when measured against the 1981 budget.

Table I

Shifts in Budget Priorities

	Outlays Shares - Percent		
	1962	1981	1984
DOD Military	43.8	23.6	31.5
Safety Net Programs	24.5	36.1	39.8
Net Interest	6.4	10.9	8.7
Other	25.2	29.3	24.9
Savings from entitlement reform	--	--	(1.9)
Unallocated Savings	--	--	(3.0)
Total	100.0	100.0	100.0

Note: 1981 and 1984 estimates as of September 1981.

Is the Defense Budget Inflationary?

A few analysts have suggested that the President's plan for increasing defense spending is inflationary. I think that argument has been pretty well laid to rest by now. Still, it is a line of argument that may reappear in the future, so I would like to review it with you. The argument that our defense plans are inflationary is quite simplistic. The critics simply note that rapid defense buildups have, in the past, been inflationary. Obviously, the most notorious was the Vietnam buildup. "So," the critics asked, "what's so different about this buildup?" They generally do not take the time to answer this question, perhaps because the answer refutes their position.

Past defense buildups, and especially the Vietnam buildup, had two characteristics that are missing from the current buildup. It is these two features that led to inflationary consequences then, and that will avoid them now. First, past buildups were surprises. They were sudden shifts -- or attempts at bringing about sudden shifts -- in the pattern of resource utilization in the economy. This type of hasty reallocation causes bottlenecks and inefficiencies in the defense sector and results in temporarily higher relative prices and costs in those industries, as well as affecting nondefense industries who are bidding for similar materials, equipment,and skilled manpower. If prices are not quickly reduced in the nondefense industries, the short-term consequence is inflation.

In the long-run, inflation is caused by excessive growth in money and credit. Furthermore, inflation offers an expedient way for the government to finance a military buildup because it is, in effect, an unlegislated tax on the economy. Finally, in Vietnam it was the explicit goal of the Administration to attempt to avoid sacrificing private consumption for public consumption. The inevitable result was that military spending was inflationary because inflation was politically expedient. (Coming full-circle, one reason why nondefense industries may not lower their prices in the face of their relative loss of demand during a military buildup is that they expect the government to inflate. In the past, they have not been disappointed in such expectations.)

As should be clear by now, the President's program is the antithesis of this approach in every way. First, the expansion of defense production is not an unplanned surprise, but rather a gradual planned buildup over several years. If Vietnam was a front-loaded expansion, the current military buildup is the reverse -- the largest increases in outlays come in the out years. Second, the heart of the President's program emphasizes reduction in the growth of money and credit as well as the elimination of deficit spending. The consequence is that the Administration's military budget will not be inflationary.

I want to address the composition of military spending in procurement and manpower because the buildup is large, and will require continued monitoring. I will discuss these matters in a moment. For now, it should suffice to compare the Administration's defense plans with those of the pattern of spending during the Vietnam War to lay comparisons to rest. During the Vietnam buildup, which was of course unforeseen, the share of government purchases for national defense rose from an initial base of 7 percent of GNP to 9-1/4 percent in roughly two years. That raised the defense share of GNP by 2 percentage points. (see Table II).

Table II

Department of Defense - Military
Outlays as a Share of GNP
(Fiscal Years)

1960	8.3	1970	8.0	1980	5.2
1961	8.5	1971	7.2	1981	5.5
1962	8.6	1972	6.7	1982	5.7
1963	8.3	1973	5.8	1983	6.0
1964	8.0	1974	5.6	1984	6.1
1965	6.9	1975	5.7	1985	6.7
1966	7.5	1976	5.4	1986	7.0
1967	8.7	1977	5.1		
1968	9.3	1978	4.9		
1969	8.5	1979	4.9		

In comparison, over the two years 1980-1982, the defense share of GNP will increase by less than one-third of that, a modest one-half percentage point. Ultimately the proposed defense buildup involves a share increase of only 1-3/4 points and that takes place over the course of six years (1980-1986). And perhaps most significantly, 7.0 percent in 1986 will be essentially equal to the share of national defense in GNP at the very beginning of the Vietnam buildup.

In contrast to the Vietnam experience, the current planned pattern of buildup over the next six years is smooth and moderate, although it does reach high absolute levels by the end of the period. In fact, even now the buildup is very old news. In last autumn's presidential election, both candidates made it clear that military spending needed to be increased dramatically, and the swansong budget of the Carter Administration reflected a new and belated commitment to that goal.

Now let's get right to the heart of the matter. Today it is recognized in every corner of the economics profession that long-term inflation is solely the result of the excessive growth of money and credit. For an increase in defense spending to result in anything more than a transitory increase in the price level, that spending must be accompanied by monetary accommodation and not be offset by reduced spending in other parts of the budget. Such an approach is just not in the cards. We are firmly committed to a reduction in the growth of the Federal budget and to reduced growth of money and credit. We recognize that the temptation to inflate the economy to pay for the public sector is foolish and eventually self-defeating. We are now paying the price of such past folly with high interest rates and a soggy economy.

Procurement and "Sectoral Inflation"

The expected expansion of military procurement will not overload industries so long as it is well anticipated and so long as alternative demands on their capacity are not excessive. The volume of defense work in industry today is still less than 60 percent of the Vietnam peak. And it is actually less than in all but three years between 1952 and 1973, spanning the entire period between Korea and Vietnam. Of equal importance, the overall size of the industrial economy is today much larger than in that earlier period. In the key industries of fabricated metals, machinery, vehicles, aerospace, shipbuilding, and instruments the level of output in 1980 was 2.2 times that of 1960.

Over the next 5 years the volume of defense work will rise fairly steadily to about 50 percent more than the 1968-1969 benchmark -- which will not be passed until 1984. In the fifth year, procurement will be 2 percent of expected GNP. Even if a critic went to the unrealistic extent of assuming absolutely no growth in the economy in the next five years, the ratio of defense procurement to GNP would not exceed the 2-1/2 percent Vietnam peak.

I would emphasize again the importance of the increase in military procurement being expected. The Services must be able to project accurately when they plan to take deliveries in major programs. The Department of Defense must minimize program adjustments and specification changes as the programs move along. And the Department needs to keep contractors well informed of its longer-term plans. Plans to shift to greater reliance on multi-year contracts will provide a significant step toward efficiency and an insurance against bottlenecks. At the same time, the Department is moving to inform contractors and other government agencies of the probable volumes and distributions of industrial activity needed to meet its multi-year procurement program. This effort needs to be enhanced in a manner consistent with the need for necessary secrecy. The Department, the rest of the government, and American industry all need, as a management tool, clear information on the broad scale and pattern of procurement.

Despite the comforting tone of much of what I have to say about the industrial aspect of our defense program, there are potential problems for which we have to be alert. We cannot know far ahead exactly what private demands will be on particular industries that are also important Defense suppliers. It has been known for some time that civilian and military aircraft production would both rise in the mid-1980s. But, so far, there are no clear signs of likely bottlenecks. Besides more precise information on Defense planning for production, we need to be alert to the pitfalls of major aerospace -- or other -- projects involving a great deal of new technology. As such projects move from initial conception to final design and production, we frequently find that the real resource cost to solving all of the technical problems exceeds expectations. We should therefore look in our planning for some margin of safety in industrial capacity as we plan for entirely new programs. The value of doing so obviously adds to the value of careful planning and tracking of program progress by the Defense Department and contractors.

Personnel

Another area of concern is military manpower. Today, our forces are in good shape. All the services are filling their recruiting quotas with high quality men and women. Reenlistments are occurring at record levels. Although there are shortages of senior enlisted personnel, these may soon be eliminated as the present group of junior NCO's completes their tours of duty and reenlist.

Unfortunately, problems in keeping the Armed Services up to strength may arise as the President's Economic Recovery Program begins to take effect. Declines in unemploymewnt will mean stiffer competition for the military in attracting personnel away from civilian jobs. A highly skilled technician who decides to reenlist in today's weak labor markets may have second thoughts in a few years when we expect the economy to be expanding rapidly.

The problem of attracting sufficient manpower is likely to be especially serious for first-term recruits. Between now and 1987, the Services expect to increase their active duty forces significantly. Unlike other employers, the military cannot generally use workers who have learned their skills in other jobs. When the military expands, it must do so from the bottom up. Although some of the increase in force levels can be achieved by higher reenlistment rates, most of it will have to come by increasing the number of recruits.

Over the next two years, the military's demand for recruits will be rising in terms of quality as well as quantity. In the past few years, critics of the All-Volunteer Military have charged that some of our soldiers and sailors do not have the education or aptitude needed to do their jobs. In response to these charges, Congress has placed statutory minimums on the percentage of recruits who must be at least high school graduates and who must score well on the aremed Forces Qualification Test. These minimums will rise for the next two years. Thus the military will have to recruit larger numbers of men and women from a smaller portion of the youth population.

This increase in demand will be exacerbated by a decline in supply. Between now and the end of the decade, the population of 18 year olds will fall by 18 percent. As the accompanying table shows, the number of male 18 year olds will fall from 2.1 million today to 1.7 million in 1990, with the bulk of that decline between now and 1985. Thus, the armed services will need to attract a considerably higher percentage of young high school graduates than it does today.

Table III

Number of 18-Year-Old Males
(thousands)

1965	1,929
1970	1,913
1975	2,146
1980	2,130
1985	1,822
1990	1,736

Although a considerably smaller population supported a somewhat larger military during the peacetime years of the 1950s, the United States had a draft in these years. The combination of factors I have mentioned -- declining unemployment rates, rising numbers and quality of recruits, and declining youth population -- will produce a severe test for the All Volunteer Military. At the same time that the potential supply of recruits will be falling, the demand for them, especially for high quality recruits, will be rising. Unless we choose the right combination of incentives, the military compensation budget may rise sharply while shortages of recruits create pressures for a return to a peacetime draft.

Military personnel problems are cause for concern, but they are not cause for alarm. This Administration strongly supports the concept of an All Volunteer Military. I am confident that, with a properly designed military pay system and other necessary adjustments, we will be able to attract sufficient numbers of high quality recruits, maintain our career force at desired strength, fill existing gaps in certain skill categories, and still keep budgetary costs within reasonable bounds. The military pay raise scheduled for October 1st, and about to be passed by Congress, will help meet these goals. It is important that the military pay structure be viewed as a way of attracting and retaining military personnels whose skills are in short supply. Therefore, flexibility is desirable in designing and administering pay and benefit changes.

To ensure that we can continue the success of the All Volunteer Military in the future, the Administration is currently studying all aspects of military manpower policy. An outstanding expert in these matters, Dr. Lawrence Korb, Assistant Secretary of Defense for Manpower, Reserve Affairs, and Logistics, is heading an interagency working group, which will report its findings to a Presidential task force of which I am pleased to be a member. We hope to have policy recommendations which will be designed to keep our military forces strong while avoiding the inequities and restrictions on personal freedom imposed by a draft.

Conclusion

Achieving appropriate balance between the needs of national security and the pressures of other priorities is as important as it is difficult. Policymakers have faced this conflict since time immemorial. The Irish economist, C. F. Bastable, described the problem at the turn of the century in words that are as relevant today as they were several thousand years ago: "... to maintain a due balance between the excessive demands of alarmists and military officials, and the undue reductions in outlay sought by the advocates of economy, is one of the difficult tasks of the statesman."

Representative REUSS. We thank you, Chairman Weidenbaum, for your presentation in general and particularly your remarks on the all-volunteer military and what the task of the task force should be are very much on target.

ADMINISTRATION'S DEFENSE PROGRAM WILL WEAKEN OUR ECONOMIC SECURITY BY CONTRIBUTING TO INFLATION

However, with your central thesis, I must say I find myself in complete disagreement. Your central thesis is that all of this talk of the administration's defense program may be inflationary has been pretty well laid to rest and shouldn't detain us. I'm quoting from you. It isn't laid to rest as far as I'm concerned and it is my view—and I want to share it with you in a dialog—that the program as contemplated, while it may technically increase our military security, is going to gravely weaken our economic security by contributing to inflation; and I believe that to be true for three main reasons which I'd like to explore with you.

The first is that I don't think you adequately distinguished Vietnam. I think that if you break down the figures and don't aggregate the buildup of manpower with the buildup of manufacturing facilities procurement you find a very alarming increase ahead if the administration's military program is followed.

Second, your assumption that there won't be inflationary pressures because the market will know that the budget will be in balance and because the administration won't generate pressure on the Federal Reserve to accommodate Treasury borrowing, I think are seriously called into question by current events which I will explain in a moment.

And finally, the administration's use of the ordinary GNP price deflator rather than the much more alarming Department of Defense price deflator, which at the urging of this committee has been constructed in recent years, as a method of projecting the inflation that lies ahead, I think is a mistake and gives us too optimistic prediction.

But let me go into each one of these three. I want to telegraph my point if I may.

Mr. WEIDENBAUM. Thank you.

Representative REUSS. First, on the comparison with Vietnam, if you look at chart 1 over there [indicating], Chairman Weidenbaum, you will see the black line is total defense outlays as a percent of GNP. That is what you were referring to and I think there's no difference between us about that black line. In Vietnam days total defense outlays went up from 7 to 9 percent over a couple years, about 2 percentage points, and our total defense outlays as a percent of GNP from here on out go up from around 5 percentage points to 7. In other words, 2 points over a 5-year period instead of over a 2-year period.

So this leads you to say that we shouldn't be alarmed, that we are doing things more slowly and considerately. My point is that, unlike Vietnam, where a very large part of the military buildup was in manpower—we needed soldiers and we got them from the cities and the farms and sent them over to Vietnam—and a relatively smaller part was in manufacturing where supply, machines, raw materials, and skilled workers are finite, that was true in Vietnam days.

Today, however, if you look at the red line, which is the breaking out of the percentage of defense buildup in the manufacturing sector—in other words, if you leave aside services and if you leave aside nonpersonnel defense outlays—what you get in the Vietnam period was again an increase of about 2 percentage points from 8 to 10 percent in the 1966, 1968, or 1969 Vietnam period, but when you come to the days ahead, if you look at the chart [indicating], in 1980, nonpersonnel defense outlays as a percent of GNP, excluding services, was 4.5 percent and by 1986 it will get up almost to 10 percent. That's almost a 5.5-percent increase as opposed to the 2-percent increase in Vietnam times.

And I put it to you that we delude ourselves if we look just at GNP percentages and that we ought to look at where the money is going, and the best example of that is the case for the MX—namely, that it closed the window of vulnerability and would render our missiles in Utah and Nevada incapable of being knocked out by the adversary—that theory went by the board, yet we are still going right ahead and building the MX, showing the immense concentration on manufacturing.

What do you say to the point I'm making?

Mr. **Weidenbaum**. Fine. I appreciate the opportunity and I want to thank you for providing us with the proper format. I find this extremely useful. I think this is a fine chart. I congratulate the staff in preparing it.

First of all, I call your attention to this procurement line, the nonpersonnel line [indicating]. Back in peacetime, in 1964, we devoted a larger share of the GNP to procurement, construction, research and development than we did at the peak of the Vietnam war, and certainly significantly larger than the peak here [indicating]. So quite literally, in historical perspective, this buildup is fairly modest.

Representative **Reuss**. Could I put a footnote in at that point? Of course, 1962 was a period in which America wasn't using its resources. We had vast unused actual or potential industrial capacity. You know, you spent the last 6 months hailing the great Kennedy tax cut of 1962 and 1964 as the thing that got us moving. Well, of course, before we got moving our GNP was miserable and hence the military took a large part of it. Please continue.

Mr. **Weidenbaum**. And, of course, we can see the speed of the buildup which was the thrust of my testimony here, and from trough to peak in a 2-year period. That's precisely the kind of crash, unexpected buildup I referred to in my prepared statement.

And you can see a planned—yes, a substantial—buildup. I do not disguise that in the slightest, but it is a more planned, a more, I would suggest, orderly buildup. A less sharp but rapid buildup over a period of many more years certainly would provide the full opportunity for American industry to adjust.

And I suggest that the adjustment doesn't happen automatically. There are two important policies that are necessary. One, that Secretary Weinberger has testified on repeatedly, is the need for multiyear procurement to provide the incentive for defense contractors to make the necessary additional investment in defense. And second, of course, which Congress in its wisdom approved, and that is to provide indirectly through tax reform the financial resources. I'm talking about the combination of the 10–5–3 liberalization in depreciation allowances plus the investment tax credit.

So with the combination of these policies, the defense contractors will increasingly have the incentive via military procurement to invest in the additional capacity to avoid the bottleneck situation and will have the financial resources through the tax relief.

Representative REUSS. I would just say I can't quarrel one bit with your contention that an orderly, planned buildup is likely to be less inflationary than a helter-skelter, pall-mall buildup, but the fact is that instead of a nice, easy 2-percent increase in total defense outlays as a percent of GNP, when you look at where the inflationary potential really is on the plant and in the laboratory and with skilled workers, there is a very steep 5 percent plus.

Mr. WEIDENBAUM. There I would quarrel with the chairman.

Representative REUSS. Well, you liked our chart. You have to accept the——

Mr. WEIDENBAUM. We're talking about macroeconomic relationships. Fine. When you're talking about specific industries and specific skills, there I think, looking at this aggregated data that I presented in my testimony, it's quite clear there's very substantial available, unutilized, underutilized capacity in our major defense industries, far more so than in the economy as a whole. In other words, the aerospace industry is operating significantly below the capacity average for manufacturing as a whole.

Representative REUSS. Subsequent hearings will explore capacity, of course, and that is a relevant question, but you do not dispute the central point that is being made that if you look at the military buildup as a percentage of manufacturing it comes out not at a calming 2 percent, but at a we'd better watch it 5 percent plus. Is that not so?

Mr. WEIDENBAUM. Oh, the chairman's arithmetic is impeccable.

WEIDENBAUM CLAIMS NO MONETARY PHENOMENON DUE TO MILITARY BUILDUP

Representative REUSS. Let us then proceed to point two where you say that inflation is always and everywhere a monetary phenomenon and that a—monetary phenomenon plus paying attention to the budget—and you say we aren't going to have any.

Well, I don't want to rehash numerous recent hearings on which you have acquitted yourself as best you could on that point, but the $750 billion slash in Federal revenues as a result of tax legislation, accompanied by the military buildup, is such as to cause some at least of the 30 or 40 million people who invest in Wall Street to feel that the administration's budgetary projections are not going to result in the end of deficits and the end of incursions by the Federal Treasury into the money markets; and thus, since the President's program was passed with general acclaim 2 months ago, something like a trillion dollars has been lost on paper at least in the stock and bond markets.

You may be right, but you will have to concede that you have several million investors, large and small, who are voting against you on that.

Mr. **Weidenbaum.** I'm not sure who they are voting against or, rather, who they want to vote in favor of, and that is, I sense and I read a great deal of concern on the part of the financial markets in this country about the willingness of the Congress to go along with the budget cuts recommended by the President.

Representative **Reuss.** But why did the market break then right after the President's program came true and a month before the President's suggested further cuts in domestic expenditures, at which Congress is admittedly gypsy moth or bollweevil or whatever balking?

Mr. **Weidenbaum.** I must admit, I never had great capacity to either forecast or even analyze and understand the day-to-day developments in the stock market and I defer to others, although I say that very generously because I really have not found people who do really, on a continual basis, understand those developments.

I can assure the chairman—I know you raised that in your earlier remarks as well—of the constancy of our monetary and fiscal policy. From the outset, we have stated a steady and slow rate of growth in the money supply, in contrast to excessive inflationary pace of recent years, is a very necessary objective of our economic program, and we have supported and continue to support the Federal Reserve's efforts to achieve that steady and moderate growth in the monetary aggregates.

Representative **Reuss.** Well, let's just get to that then. You make a particular point in your testimony of saying that if there are signs that the Federal Reserve is going to accommodate the administration by creating money at a rate faster than in its independent wisdom it determines to be in the national interest, that that will cause inflation.

Mr. **Weidenbaum.** I was looking back at the sad experience of the past.

Representative **Reuss.** That's your point, isn't it?

Mr. **Weidenbaum.** That's occurred in the past, as we know.

Representative **Reuss.** Right. It certainly has, and the question now is whether things have changed. I remind you that in California a month ago President Reagan blamed high interest rates on the Federal Reserve and then that was sort of explained by White House spokesmen a day or two later as not intended to be critical of the Fed. Then Sunday, in an interview over the weekend, Secretary Regan said that the Fed should be more accommodative in its monetary policy, and then that was sort of semi-repudiated but then, again, in Texas I noticed the Secretary again said that the Fed ought to create more transaction money. Isn't that precisely the sort of call for monetary accommodation which you have rightly been critical of in the past?

Mr. **Weidenbaum.** Well, I interpret all this as clear evidence that whatever difficulties the Federal Aviation Agency has had, it's overcome that and the airlines are continuing to operate and to move our officials from place to place as they need. I have refrained over the years in a variety of administrations from commenting on newspaper accounts of the comments of my colleagues.

Representative **Reuss.** I'll not press you to change that admirable view of how to conduct yourself.

Mr. **Weidenbaum.** I don't hesitate, however, Mr. Chairman, to expound on my views and, more importantly, the views of the administration I serve.

Representative **Reuss.** Let's hear them specifically so we may get right to the heart of it. It is true—somebody can supply us with the figures—but M1B, which includes checking and savings accounts, is down below the target. M2, which includes money market funds and the like, is well above it. The Federal Reserve's alibi, or whatever, is that with fast-changing money instruments maybe the best they can do is keep one foot on a block of ice and the other on the fire and on the average the temperature will be all right.

Mr. **Weidenbaum.** The chairman has a way with words.

Representative **Reuss.** Now it's tempting to jump on the Fed and say their M1-2 is below their target and they'd better rev it up, but if they suddenly do rev it up it's going to rev up—excuse me. I misspoke. If they suddenly rev up their transaction account aggregate they are also likely to rev up unwittingly their money market aggregate and with the dire consequences that you predict.

Do you, therefore, speaking as a private person, think that the Fed should now rev up M1B?

Mr. **Weidenbaum.** Speaking as a member of the administration, I don't think the Fed should rev up. I think the Fed should continue to follow its announced policy of monetary restraint, which is the policy that we have steadily supported from the outset of this administration. I am mindful of the difficulties in calibrating the specific movements of the various monetary aggregates to achieve those targets, but I strongly support the targets established by the Fed.

But more important than the specific numbers, I think, is the underlying policy. We will only continue to make progress, as we have so far this year, in reducing the rate of inflation by following a steady, consistent policy of monetary restraint. That, of course, has been the consistent statement of the President, going back to his comprehensive campaign statement in Chicago back in September through the February white paper where we enunciate our economic and monetary policy, and continuing through statements to this very day.

We believe, however, that we need to share the anti-inflation burden with the Federal Reserve so that we, as you know, have embarked on a major effort at regulatory relief, a major effort at expenditure restraint, and many major efforts to curtail off-budget credit programs, because each of those——

Representative **Reuss.** Why didn't you embark on a major effort at the containment of revenue-reducing tax measures? Why did you adopt that grotesque $750 billion reduction over the next 5 years?

Mr. **Weidenbaum.** As the chairman knows, the administration initially came in with a very clean tax bill and it was in the legislative process, in the necessary give and take, that——

Representative **Reuss.** Why didn't you veto it?

Mr. **Weidenbaum.** Well, I did not recommend a veto.

Representative **Reuss**. Why didn't you?

Mr. **Weidenbaum**. Because I thought that, on balance, this was a good tax bill. I think that the American public does want some lightening of the load of taxation, certainly not the effective increase that would occur in the effective average tax rates.

Representative **Reuss**. Why then didn't you veto it and have the Congress enact such a bill, which could have been done with my support?

Mr. **Weidenbaum**. I appreciate the belated offer of support.

Representative **Reuss**. It's not belated.

Mr. **Weidenbaum**. When the tax bill—our tax proposal was sent up here, it became quite clear that we could not command a majority support in the House for the clean tax bill.

Representative **Reuss**. Why didn't you make your alliance with those who wanted a fiscally responsible tax bill, which would have gotten the deficit under control and kept interest rates down?

Mr. **Weidenbaum**. I think this is a fiscally responsible economy program if you relate the tax cuts, the budget cuts, the regulatory relief and monetary restraint, and the proof of the pudding is in the eating. A year ago we had escalating inflation. We saw the painfully high inflation rate, but it's measurably lower. The CPI to date has averaged 9.5 percent.

Representative **Reuss**. I congratulate all of us on that, but that's due in large measure to OPEC oil glut, to the bountiful harvest, and to the grossly overvalued dollar which has made imports cheap; is it not?

Mr. **Weidenbaum**. The bountiful harvest mortal man can't claim credit for here in Washington. But the oil glut, as you referred to it, I think in part—I wouldn't overstate it, but in part, the President's decision to accelerate energy price deregulation at the beginning of his administration set in motion the forces for increasing conservation, increasing domestic production, and reducing our imports and reducing our dependence on OPEC. All of that did set in motion forces that have brought down the price of gasoline.

Representative **Reuss**. Well, from whatever cause, I unstintingly join you in welcoming 8 percent rather than 12-percent inflation.

Mr. **Weidenbaum**. Thank you sir.

Representative **Reuss**. Let's now pass on to the—since we don't seem to be persuading each other on this one, let's pass on to point three of our differences. I'll restate it.

ADMINISTRATION'S USE OF THE SO-CALLED GNP DEFLATOR

You and the administration have used the so-called GNP deflator in your projections of the years to come which deflators present very optimistic figures. For example, on table II, you see for 1983, 1984, 1985, and 1986, respectively, 7.3 percent for inflation, 6.2, 5.4, and 5.2 percent. Those are the figures we have all been dealing with in the last months.

My point is that since we now have, as a result of this subcommittee, the ugly fact that traditionally Defense Department inflation is much worse than overall inflation because the sector is so concentrated that we make a great mistake in discarding it, and therefore that we delude ourselves as to the allegedly noninflationary character of the military buildup.

So I urge you to use that which the good Lord hath now provided; namely, the DOD deflator. Why not?

Mr. **Weidenbaum**. The good Lord indeed provided, and praises vary. But it's been my observation, Mr. Chairman—and this is a nonpartisan matter—that the Budget Office has required each of the departments in making their budget estimates to use a common price assumption. That is the GNP deflator. And, as I recall, in various administrations specific departments and especially the Pentagon have urged the use of a differential deflator.

At least in the past, the rationale for using the common deflator under the circumstances that you describe is the desire to keep the pressure on each of the spending departments so that if they do experience above-average rates of inflation, rather than accepting them, put the pressure on the department to make whatever changes they can to alter that forecast so that they can achieve the target rate of inflation. It's another way of putting on the pressure for economy and efficiency.

Now in my official position, I can't attempt to second-guess Pentagon procurement practices, but frankly, as a private citizen, I never hestitated to do so; and it strikes me that the approach that this administration is using will at least indirectly put significant pressure on the Pentagon to continue to make needed reforms in procurement concepts, procedures, and practices.

EXCESSIVE INFLATION RATE OF DOD PROCUREMENT

Representative **Reuss**. Well, the Department of Commerce, which publishes these departmental deflators, has spread on the record now for 5 years or more the grossly excessive inflation rate of the Department of Defense procurement. Every year except 1979 it's been worse. And what is even more alarming and which calls into question your hope that the Defense Department will have a conversion, it's been getting worse.

For instance, in 1980, the GNP deflator was 9.2 but the Department of Defense deflator was 14.6 percent. In 1981, it was 13.4 for the Department of Defense as opposed to 9.9 percent for GNP. That doesn't indicate to me that the Defense Department is improving.

So I ask you, what are you going to do if they keep on doing what they have been doing since records have been kept?

Mr. **Weidenbaum**. Well. first of all, we need to recognize that one of the major reasons for that runup in the DOD deflator compared to the GNP deflator in 1980 and 1981 was the price of oil, gasoline, and POL.

Lubricants are a much larger share of the military budget than of the civilian economy or of the total GNP. So in a period where we had a very rapid runup in energy prices you would expect the GNP deflator not to move as rapidly as the Defense deflator. But apparently it's a time when energy costs have been declining——

Representative **Reuss**. Therefore, you hope——

Mr. Weidenbaum. I wouldn't use a deflator lower than the GNP deflator.

Representative Reuss. It wouldn't hold water in it. Therefore, you hope that the outrageous excessive inflation of the Pentagon will become somewhat less outrageous as POL costs calm down?

Mr. Weidenbaum. Let me defend the Pentagon. I think paying world market prices for petroleum is not an outrageous act and——

Representative Reuss. Right. The outrageous referred to everything but POL.

Mr. Weidenbaum. I wonder if that is a useful designation, but that's a matter of judgment.

Representative Reuss. Well, now, suppose that the Defense Department, POL aside, does continue to generate a higher rate of inflation than the economy generally and thus then the projections made of what it will cost this Nation to achieve the absolutely essential military buildup that the administration has prescribed? What do you do, for example, if Data Resources projections come true and if over the 4-year period the military buildup, due to excessive inflation, costs us an extra $47.6 billion? Will you ask Congress for higher taxes to pay that? How are you going to do that?

Mr. Weidenbaum. Should that eventuality occur, initially it would be a proper subject for the Budget Director and the Secretary of Defense. My view is that the price assumptions provided are the appropriate ones because they will make that situation less likely to occur by putting strong budget pressures on military procurement to reduce that historically higher cost.

Representative Reuss. Although there is a considerable slack in labor markets generally due to the 7.5 overall unemployment rate, there's evidence that insufficient numbers of engineers, machinists and other skilled defense workers are now on stream. Some, including former Defense Secretary James Schlessinger, believe that the rapid increase in procurement could bid up wages excessively and others argue that there will be a drain of skilled workers out of civilian industries.

What do you say to those contentions?

Mr. Weidenbaum. I think we need to be mindful of those concerns and this is why I think the phase buildup is so important, so that, yes, resources can shift; yes, people can be attracted to science and engineering careers who might otherwise opt for other labor market activities. There's an adjustment process at work and the longer we give that process to work, the more effective it will be; and if there's anything we learned from the past, it's the stop and go, the crash buildup—that is precisely when you generate the bottlenecks, the costly bottlenecks. And I suggest that we have signaled for a very substantial period of time now—I say this in a nonpartisan way—we have signaled for quite a few years now that there would be a significant buildup in defense, and I think this will continue to attract the resources required.

Representative Reuss. A specific example of where leadtime seems to be lengthening is in the F-16 aircraft where since 1977 the leadtime has grown, I'm told, from 20 months to 42 months, largely because of lack of subcontractor capacity for critical components such as bearings, forgings and integrated circuits. You made the general point before that in considerable sectors of manufacturing there was adequate capacity, but what about bearings, forgings and integrated circuits?

Mr. WEIDENBAUM. I haven't made a specific study of that, but you do raise a point that I have raised over a period of years, and that is the need to keep in mind that some of the extremely onerous regulatory requirements, especially in the environmental and OSHA area, have had a negative effect on our industrial base. I think that is something we need to take into account as we continue to review the body of regulations which quite clearly has had a dampening effect on our inventory of key facilities like foundries providing forgings, and so forth.

And here, the Congress has an opportunity in reviewing the Clean Air Act to make some constructive moves. It's not a question of suffering the pain of adjustment, but taking some specific actions that will reduce the severity of any problem that could arise.

Representative REUSS. Suppose that the forecast for GNP growth in the administration's program turns out, for one reason or another, not to be realized; thus, the share of GNP going to defense will obviously increase. This means there could be an even greater shift in military costs at the expense of the civilian sector.

Is this the intent of the policy or would the policy be modified if the growth forecast turns out not to be true?

Mr. WEIDENBAUM. I have difficulty following your line of reasoning. If the economy will not expand as rapidly as we anticipate, there will be more underutilized or excess capacity in the economy——

Representative REUSS. It would fall as a percentage of GNP, would it not?

Mr. WEIDENBAUM. Yes.

Representative REUSS. If that happens, what is the administration's contingency plan for that? Is is going to nip the civilian sector further or is it going to——

Mr. WEIDENBAUM. I'm not sure what—I don't agree with your assumption.

Representative REUSS. Of course not. But if it happens?

Mr. WEIDENBAUM. If we reach a situation where there's more excess capacity in the economy than we anticipate and the military uses a larger percent of that capacity than we have estimated, I'd not—I don't see the problem.

Representative REUSS. Well, instead of the military being x percent of GNP, assuming the military dollar expenditures continue, it becomes x plus 2 percent or x plus 4 percent. Is it the administration's plan to keep military expenditures where they are and take the shortfall out of the civilian sector or is there to be a sharing or what?

Mr. WEIDENBAUM. First of all, the hypothetical situation you describe infers a significant reduction in what an economist would call the opportunity costs of our defense program. In other words, the diversion of resources, a shift of resources from civilian to military, would be less than we envision. But in any event, military programs that we have put together and we propose are based on our evaluation of the national security needs of this Nation and the percentage of

GNP calculations and the percentage of budget calculations follow from that decision.

Representative **Reuss**. Therefore, if the GNP growth assumption proves not to be realized, in that event, the shortfall will come out of nonmilitary programs?

Mr. **Weidenbaum**. I don't see what shortfall you're referring to.

Representative **Reuss**. Well, if military programs take a larger proportion of GNP because GNP is smaller, then civilian programs would take a lesser amount.

Mr. **Weidenbaum**. Well, again——

Representative **Reuss**. Or is the total Federal spending going to increase?

Mr. **Weidenbaum**. It's a very hypothetical situation. Of course, should the economy be operating at much less—at a lower level of utilization of resources that we envision in those out years. First, defense would be a higher percentage; second, tax collections wouldn't be quite as high as we have estimated; and third, some expenditures would be higher than we estimated. This is the adjustment process at work which would contribute to an adjustment in the economy to achieve the level of economic activity we are expecting. But I don't follow why in this hypothetical situation, there should be a decline in the civilian private sector that supposedly needs to be offset by an equivalent offsetting decline in the public sector. I don't follow the reasoning, frankly.

Representative **Reuss**. Well, it may not be useful to pursue it.

Mr. **Weidenbaum**. Forgive me if I'm not as helpful as I try normally to be.

Representative **Reuss**. I always forgive you and there's very little to forgive. We end, however, with a difference of view in that I think the combination of the Pentagon's deflator, the fact that all of the program has to work, the whole economic program has to work perfectly in order for the military portion not to be inflationary, and the excessive manufacturing element of the current military buildup as opposed to the Vietnam military buildup does not leave the question of the inflationary effect of our military program to be something to be discarded as not worthy of current discussion. I think it is a serious problem and we will be back together on this many times.

Mr. **Weidenbaum**. But, Mr. Chairman, I have difficulty in accepting the term "excessive" because, according to your own chart, the procurement portion—the portion of the GNP devoted to military procurement in 1986 at the end of the buildup isn't quite where it was in 1968, and it's visibly below where it was in 1962. So "excessive" seems excessive to me.

Representative **Reuss**. It represents a 5-percent increase rather than a 2-percent increase, and that is the source of my concern.

At any rate, you have been a great help, as always, to this subcommittee. We appreciate your appearance here.

We will now stand in recess until October 13, when our witness will be Charlie Schultze, former Chairman of the Council of Economic Advisers. Thank you very much.

[Whereupon, at 11:10 a.m., the subcommittee recessed, to reconvene at 10:30 a.m., Tuesday, October 13, 1981.]

THE DEFENSE PROGRAM AND THE ECONOMY

TUESDAY, OCTOBER 13, 1981

Congress of the United States,
Subcommittee on Economic Goals and
Intergovernmental Policy of the
Joint Economic Committee,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10:30 a.m., in room 2212, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the subcommittee) presiding.

Present: Representative Hamilton.

Also present: James K. Galbraith, executive director; Richard F. Kaufman, assistant director-general counsel; and Chris Frenze, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative Hamilton. The subcommittee will come to order.

Last week, Murry Weidenbaum, Chairman of the Council of Economic Advisers, testified for the administration before this subcommittee. His view was that the defense buildup will not cause inflation because, unlike the buildup that occurred during the Vietnam period, this one will be smooth and orderly. In addition, Mr. Weidenbaum said it will not have a severe impact on the economy because defense spending will, as a percentage of GNP, not rise as high as it did during Vietnam.

The arguments made by Mr. Weidenbaum raised issues and questions:

What's the best way to assess the likely impact on the economy of President Reagan's defense program?

How much do we know about capacity utilization in the defense industries?

Are we able to measure potential resource constraints, in terms of physical plant and capacity, and in terms of manpower?

Is it correct that this defense buildup is being well planned, and will be so gradual and orderly that it will not create problems for the economy?

One thing we do know. The planned increase outlays, from $160 billion in 1981 to $341 billion in 1986, is the largest increase in our peacetime history. Yet, questions have been raised about the accuracy of the administration's defense cost estimates. Some analysts believe the costs of the administration's defense program have been underestimated by at least $50 billion.

If the costs are underestimated, what will the consequences be?

Thank you.

Senator Hawkins was unable to attend today's hearing and I am, without objection, placing her written opening statement in the record at this point.

[The written opening statement of Senator Hawkins follows:]

WRITTEN OPENING STATEMENT OF HON. PAULA HAWKINS

Welcome gentlemen to a most important hearing; I regret not being able to attend, myself, to hear your testimony.

Today the subcommittee is going to examine defense-related issues, which from my perspective, must be seen in a larger context of economic growth.

I am deeply concerned over the state of both our national defense and our economy. This is why I support the President in his efforts to restore the health of the American economy and to ensure that the strength of our military is sufficient to meet all challenges. I do not believe these two goals are incompatible.

In the most basic terms, spending for defense is the product of a balancing act between demands from alarmists for huge spending levels to counter foreign threats to our Nation and demands from super-economizers for undue reductions in military outlay.

The preponderance of evidence is that the threat is growing. Soviet technology improving rapidly—if we could produce tactical aircraft at the same rate the USSR is producing them, we would reequip our entire first line air force every 18 months.

The U.S. graduates 50,000 engineers annually, one-half of which are foreign students; the Soviet Union graduates 300,000 annually. The U.S. has 575,000 scientists and engineers working on research and development projects and, of those, 170,000 are working in defense-related projects. The USSR has 1,300,000 scientists and engineers in R&D; of those, more than 500,000 are doing defense-related R&D.

These are troubling, threatening statistics. The balance between defense and non-defense expenditures has been over-tilted far too long. Yet as we gradually expand military expenditure, we must achieve significant savings in costs—if not, then the U.S. will have more expensive, not more and better weapons.

Representative HAMILTON. I am very happy to welcome one of the Nation's most distinguished economists and former public servants, Charles L. Schultze, who was President Carter's Chairman of the Council of Economic Advisers, and who previously served in the Bureau of the Budget, under President Johnson.

Mr. Schultze, we're delighted to have you with us, and are most grateful for your willingness to help us with the questions that surround the defense buildup which was begun under the previous administration.

Following Mr. Schultze's testimony, we will hear from two other highly qualified experts: George Brown, vice president of Data Resources, Inc.; and Jacques S. Gansler, vice president of the Analytic Sciences Corp.

Mr. Schultze, we have your prepared statement, and it will, of course, be entered into the record in full. We look forward to your testimony.

You may proceed, sir, as you wish.

STATEMENT OF CHARLES L. SCHULTZE, SENIOR FELLOW, BROOKINGS INSTITUTION, AND FORMER CHAIRMAN OF THE COUNCIL OF ECONOMIC ADVISERS

Mr. SCHULTZE. Thank you, Mr. Chairman.

If you will, what I'll do is go through and summarize my prepared statement, and then hit the highlights.

Mr. Chairman, we are fortunate in the United States in having an economy in which, within quite wide limits, we can adjust to whatever level of defense spending is appropriate for our national security. We don't need to avoid increases or decreases in the defense budget for economic reasons, because we can't afford the increases or don't know how to employ productively the people let go when there is a decrease.

ECONOMIC EFFECTS OF THE DEFENSE BUDGET

But we do need to understand the economic effects of the defense budget: first, in order to adjust our tax, monetary, and other monetary policies to make a smooth transaction; and second, and in particular, the speed at which we change the defense budget does have important economic impacts, even when the level of defense spending may not.

I'd like to talk to this subject in two parts. First, I will talk about a few general principles, and then turn to the specific implications of the planned defense buildup which the administration has set before the Congress over the next 4 to 5 years.

Let me start by getting out of the way one often-repeated fallacy about defense spending. That is the fallacy which says that defense spending is particularly inflationary, because what we buy with defense is wasteful, not useful—but wasteful goods: we shoot it away or park it in a weapons inventory lot somewhere.

In fact, the economic impact of the defense budget has nothing whatsoever to do with people's judgment about the usefulness of what we buy.

In the private market, when a transaction occurs, normally it has two parts: Income is paid out to producers of a good or service; that generates income. The good or service is then sold into the civilian economy, and that absorbs an equivalent amount of income in the revenue from the sale, and the two more or less cancel each other.

When the Government buys something, only one-half of that transaction is completed. That is, income is paid out to produce the particular good the Government buys, but the Government doesn't turn around and sell it back into the market. Because of that fact, obviously the Government therefore has to levy taxes to complete the second half of that transaction and absorb that purchasing power.

That doesn't mean the Government always has to balance its budget precisely, but if it generates the creation of a large amount of income, and runs a very large budget deficit because it doesn't levy the taxes, then it can get into inflationary problems.

The main point is that this process has absolutely nothing whatsoever to do with the usefulness, or wastefulness, of the good which is being produced. If, for example, the Federal Government should buy and distribute free, massive amounts of food and housing and clothing, it would be terribly inflationary if we did not support that with some form of taxation.

Mr. Chairman, I hate to take up your time with this elementary proposition. But it is so elementary that although, I've heard the fallacy often, I've never seen anybody refute it on paper, so I thought I'd try my hand at it. I got tired of listening to it.

There's a second—somewhat more, perhaps, justifiable fallacy—at least it's easy to understand where it came from—that is that the Japanese—and sometimes you hear it about the Germans—have higher productivity and greater competitiveness than the American economy, in part because they don't bear the defense burden that we do. And I think that's wrong.

If our defense budget increases, and our defense budget principally came out of investment—that is, when the defense budget went up, investment went down—then indeed increasing defense spending would mean lower productivity and lower competitiveness. But of course, when we have to increase defense, there is absolutely no need for our Nation to levy taxes in a way which depresses investment instead of consumption.

In fact, if you look at the last 30 years, there is little or no evidence that there is any close relationship between increases in defenses and decreases in investment.

Maybe you can say that the defense budget absorbs skilled manpower and talent and scientific expertise that might otherwise be available to the civilian economy, increasing its productivity and competitiveness; and there may be something to that. But you've got to balance that by the spillover effect of defense technology into civilian areas. It is probably not a coincidence that the American economy, in terms of its exports, tends to be particularly competive in industries somewhat related to the defense area—communications, aircraft, heavy capital goods—where the Japanese tend to be particularly competitive in consumer goods.

So, the defense budget has both pluses and minuses here. But I see no evidence that there is any significant relationship between the size of the defense budget and the competitiveness or productivity of the economy.

In short, Mr. Chairman, I don't see anything inherently inflationary or productivity lowering about a particular level of defense spending. There is no economic reason why we can't have the level that our security demands. However, the economic impact of rapid changes in the defense budget can give rise to very special effects that are true of the defense budget and not of other parts of the Federal budget.

In the first place, for a large part of the goods sold in the Defense Department, there is only one customer: the Defense Department. So, if you increase defense spending by $20 billion, which is only 1 percent of GNP, that may mean 10 to 20 percent increases for the industries specializing in defense, and even larger increases in output and sales for particular companies, in a short period of time.

If, on the other hand, the Federal Government increased its budget by $20 billion elsewhere in the normal way—for example, by increasing transfer payments such as social security or unemployment compensation—those would be spread around the economy very widely, in a very diffuse way, so that no one firm would probably get more than a 1- or 2-percent sales increase.

And so, unlike other areas of the budget, a very rapid increase in defense spending can require abnormally large expansions in output from a particular and highly concentrated group of firms.

What appear to be moderate increases in the total Federal budget, when measured against total GNP, turn out to be relatively large increases when looked at in terms of the capacity of the firms who are going to have to produce that increase. And very rapid increases in defense spending can lead to bottleneck-type cost increases. Defense firms scramble to increase their output too fast for efficient management, and prices are bid up for specialized skills used in the defense industries.

There are two consequences of these bottleneck-type cost increases:

First, and most obviously, the Pentagon itself suffers cost overruns.

Second, civilian industries using those same specialized skills and materials face rising costs.

In fact, however, except under very abnormal conditions, almost by definition, materials and skills which are so specialized for defense as to be a bottleneck and in very short supply don't normally bulk large in the costs of other firms. In general, bottleneck-type cost increases in the defense industry brought about by very rapid increases in producement, probably don't have a very large macroeconomic impact in terms of their spillover.

The principal problem with such bottlenecks lies in the cost overruns themselves, and the harmful effect of those cost overruns on the military establishment. And I want to come back to that.

Because a rapid increase in defense spending has an impact on a well-defined group of firms, there are a few other special characteristics of defense spending not shared by most other forms of Government spending:

When a large increase in defense appropriations is enacted, and probably even before contracts have been bid upon or let, managers of defense firms now face a fairly certain prospect of a good sized increase in their business. They can make initial decisions about R. & D. and personnel, and then stockpile inventories; not so for an equivalent increase in the civilian budget, for reasons I indicated earlier, since the same amount relative to GNP—let's say $20 billion—is spread around so broadly, you don't get that kind of anticipatory reaction.

The same thing is true about capacity expansion. Facing a known increase in the defense program, defense firms, at least within some limits, can begin to take steps to increase their capacity even before the contract is let. And again, this is not something that happens with the rest of the economy.

And so, you have a paradox: We tend to think, and properly, of defense spending as relatively slow moving, with long leadtimes, difficult to get started, difficult to turn around. And that's partly true. But also, because of the very nature of defense spending it may have earlier economic consequences than an equivalent amount of spending in other parts of the economy.

Let me turn, if I may, Mr. Chairman, to the specifics of the defense buildup ahead of us.

SPECIFICS OF THE DEFENSE BUILDUP

As you know, the outgoing Carter administration plan for an increase in defense spending over the 1981–85 period was for about 5 percent in inflation-adjusted terms. The Reagan administration has increased that to 9 percent a year—a 9 percent a year expansion, on the average, over the 4 years from 1981 to 1985, in inflation-adjusted terms.

CEA Chairman Weidenbaum pointed out in his testimony that if you measure this in terms of the total economy, it's not large. If you look at the table on page 9 of my testimony, budget authority as a share of GNP, when both budget authority and GNP are measured in inflation-adjusted terms, goes from 6.1 percent of GNP in 1981 to 7.5 percent in 1985: Not a very large increase in terms of total GNP.

Budget spending for military goes from 5.5 percent in 1981 to 6.8 percent in 1985, an increase of less than 1.5 percentage points in GNP over a 4-year period, compared to more than 2 percent during the Vietnam war, in a period of 3 years.

And in fact, this increase pales in the shadow of Korea, in which defense spending went from 1949's 4.5 percent of GNP to 1952's 12.5 percent of GNP.

So, looked at in the aggregate, the coming buildup doesn't look very large. But if we look at it in a way more calculated to get some idea of the impact on the particular industries concerned, the impact becomes somewhat larger.

Gary Wenglowski, who is a partner and head of economic research for Goldman, Sachs, and who will, I believe, appear before this committee later, has pointed out that the current buildup in military spending is different from the Vietnam period. In the Vietnam period, a large part of the buildup was in personnel; we substantially increased the number of people in the Armed Forces.

That's no longer true. We're no longer interested in increasing the size of the Armed Forces at all. The share, as Wenglowski has computed it—the share of the nonpersonnel DOD budget—that is, you take the DOD budget and subtract all pay, military and civilian—the share of that budget in GNP, less services—that is, this goods-producing output in the economy—goes from 6 percent in 1980 to 10 percent in 1986. It goes up by 4 percentage points. The procurement, R. & D., construction, supplies, purchases from the civilian economy, is thus measured as a fraction of the nonservice output of our economy. That increase is more substantial—4 percentage points from 1980 to 1986, compared to a 2.5-percentage-point increase in the same concept during Vietnam.

I have done some similar calculations to drive home the relative magnitude, the speed of the buildup. For example, in inflation-adjusted terms, budget authority in the Pentagon for those nonpersonnel items, will grow by an average of 14 percent a year from 1981 to 1985.

In inflation-adjusted terms, procurement and R. & D. will grow about 16 percent a year between 1981 and 1985.

Representative HAMILTON. Sixteen or eighteen?

Mr. SCHULTZE. Sixteen. There is an error in the original text.

Over the next 4 years, if total GNP grows at about 3.5 percent a year—which is a pretty good clip, somewhat less optimistic than the administration, but a fairly good clip over the next 4 years—if GNP goes up by 3.5 percent a year, the nonfarm, nonservice part of GNP—which you can—roughly, which you can call the nonfarm goods-producing GNP—will grow by about $195 billion.

Nonpersonnel outlays in the Defense Department will grow by $60 billion. Thirty percent of the increase in goods-producing GNP will go to the military over the next 4 years, which is a substantial increase when measured against a GNP growing not in boom fashion, but relatively well. This is, in turn, from an industry which constitutes 6 percent of the base. So, you've got 6 percent of the base, but you're going to take 30 percent of the increase—and that's fairly substantial.

The procurement-oriented nature and the rapid pace of the buildup, therefore, will put some strains on the defense industry. Capacity will be strained. Managerial oversight will be stretched thin. Specialized skills will probably be in short supply. The major harm from all of this will not be in terms of their overall economic impact. For reasons I indicated earlier, that's not likely to be the case.

Even after the buildup, military procurement and R. & D. will still only be a modest fraction of our industrial base; with a lot of excess of industrial capacity, and 7.5-percent unemployment, with plentiful materials, bottleneck problems which will occur in the defense industries probably will not become a major source of cost pressure in civilian industries, as it sloughs over. I don't think it's going to be that important.

However, it is a significant problem that will occur in the military budget itself, because of those very probable cost overruns, arising not from the overall level of defense spending, but from its rapid buildup.

CONSEQUENCES OF ATTEMPTING TO DOUBLE DEFENSE PROCUREMENT AND R. & D.

The consequences of attempting to double the real procurement and R. & D. budget over the next 5 years may be more military than economic. The main result may be to squeeze out of the defense budget a large part of the nonglamorous but vital increases in spending for the deployment, readiness, and combat capabilities of our conventional forces. This result is likely to occur for a combination of reasons.

First, the magnitude of the cost overruns may be very sizable. As defense analysts for Data Resources have recently pointed out, price increases in the defense budget, even in recent years when defense was not increasing rapidly and even excluding oil prices, have been much larger than for the economy as a whole, a fact which does not appear to have been taken into account in the current defense budget projections.

Second, the recent history of cost overruns will be substantially magnified by the bottleneck problems associated with the very rapid pace of the procurement expansion. as I discussed earlier.

Third, I think it highly unlikely that the political climate over the next 4 years will support defense appropriations that will continue to escalate well beyond the increase already planned. That's already substantial. That is, the cost overruns may well have to be swallowed somewhere in the defense budget.

The inevitable collision between substantial cost overruns on procurement contracts already underway and the defense budget total is unlikely to be revised upward and will probably produce a sharp reduction in funding for those particular items in the budget that can be pared and do not appear to threaten major weapons systems.

The absolutely top priority apparently given by this administration to strategic procurement narrows even further the areas eligible for cuts. If past history is any guide, the cuts are likely to come out of investments in standard equipment for the ground forces and such things as ammunition reserves, fuel used in training flights, live use of expensive weaponry in combat training, and a whole gamut of items that can be reduced quickly in the face of a budget squeeze whose consequences are not so easily seen or measured.

The large cost overruns that are likely to accompany the very rapid planned buildup in procurement spending may well leave our Armed Forces with too small a quantity of very high-priced weapons and with reduced readiness and less capacity to deploy, use, and maintain them to combat. While the total defense budget will have risen sharply, the increases for some of its most critical elements may have been squeezed out.

Let me again stress, the problem does not arise from the level to which defense is planned to grow. If the national security in its broad context requires it, then the Nation can adapt to this level with appropriate monetary and fiscal policies. The problem stems not from the level but from the rapid pace of the increase in the defense budget. And the harmful consequences of an excessive pace are not so much economic as military.

The Congress is now wrestling with the difficult problem of how to adjust its long-run fiscal policy to the fait accompli of a tax cut that's too big. Barring further action to raise taxes or cut spending, the budget deficit in 1984 will amount to $90 billion or more.

I don't believe that the fate of the Nation hangs on your ability to bring the budget into balance by 1984, but I do think it is important to take action to reduce the prospective budget deficit by 1984 significantly below the $60 billion level at which it's now running. Without such action, too much of a burden will be placed on monetary policy and on interest rates over the next several years, which even in the best of circumstances will be higher than we're used to. These will be made higher still.

If I'm right about the harmful effect on our military structure of too rapid a defense buildup, then both national security and economic considerations call for a stretchout of that buildup in areas other than those addressed to investment in the training, deployability, and combat readiness of our conventional forces.

I do not believe, of course, that all or even most of the required fiscal tightening can come from slowing the pace of a military budget increase. In my judgment, some revenue increases are clearly necessary. But the cuts which the President has suggested, amounting to only 2½ percent of defense spending by 1984, are only tokens. I don't have a particular target to offer. I'm convinced, Mr. Chairman, that a larger effort is nevertheless warranted.

Representative HAMILTON. Thank you very much, Mr. Schultze.

[The prepared statement of Mr. Schultze follows:]

PREPARED STATEMENT OF CHARLES L. SCHULTZE*

Mr. Chairman and members of the Committee, I welcome the opportunity to discuss with you the economic effects of the defense budget. Within very wide limits, the United States is fortunate in having an economy that, with proper policies, can adjust to as high or as low a level of defense spending as the nation and its leaders think is appropriate. We do not need to avoid either increases or decreases in defense spending on grounds that we cannot afford the increase or productively reemploy the resources freed up by the decrease.

While decisions about the proper long run level of defense spending should not be driven principally by economic considerations, the nation, however, does need to understand and pay attention to the economic effect of defense spending for two reasons:

first, because we do need to adjust our tax, monetary, and other policies as to absorb smoothly the effect of a higher or lower level of denfense spending, and

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*The views expressed are my own and are not necessarily those of the officers, trustees, or other staff members of the Brookings Institution.

second, because we need to pay attention to the *speed* at which we change the level of defense spending. While the economy's ability to adjust is very large in the long run, its ability to make large changes quickly is far from unlimited.

I would like to proceed in two parts: *first*, to set forth some general propositions about the economics of defense spending, partly in order to refute some commonly heard fallacies about the subject which are sometimes employed by both proponents and opponents of increased defense spending;and *second*, to discuss some of the specific economic implications of the current defense buildup, started by President Carter and accelerated by President Reagan.

I. *Some General Principles*

Let me begin by getting one often repeated fallacy out of the way. Defense spending is sometimes alleged to be inherently inflationary compared to other forms of governmental spending because the products that the defense establishment buys are "wasteful" or "nonproductive" and do not add to the supply of useful goods, presumably like food, automobiles, toothpicks, or barber services. In fact the economic effect of defense purchases has nothing whatsoever to do with one's judgment about the usefulness of products bought.

In a private market situation when goods are produced two things happen: income is paid out to those who produce the goods, and an equivalent amount of income is removed from the hands of those who buy the goods. The creation of purchasing power is matched by the sale of goods, the receipts from which absorb the purchasing power. But a government purchase, civilian or military, completes only one-half of the two-way connection. When goods are produced for the government, the government does indeed pay income to the producers. But the government doesn't turn around and sell these goods to the market place, thereby absorbing an equivalent amount of income and purchasing power. In the case of government purchases, the extra income generated in production is not absorbed by the sale of an added supply of goods on the market. The government must, therefore, levy taxes to soak up the added purchasing power that is created when goods are produced for it. While government need not always cover every dollar of its purchases by taxes, large scale failure to absorb the added purchasing power -- that is large scale budget deficits -- can cause inflation. Purchasing power has been added to the system but not reabsorbed.

In sum, goods purchased by the government do not add to market supply in the economic sense of the term. Hence taxes must be levied. But the military nature of the goods is absolutely irrelevant. If government bought massive amounts of food, clothing and houses, and distributed them free of charge it would still have added nothing to the economic supply of goods in the country. Inflation would still result, no matter how "useful" the goods in question.

I apologize for subjecting you to this elementary discussion. But precisely because it is a common fallacy, and so elementary, I have never seen a refutation of it on paper. And so I thought I would try my hand at it for the record.

Another frequently heard proposition states that the lower share of defense spending in the economy of Japan (and to a lesser extent Germany) compared to the United States is an important reason for the higher productivity growth of Japan. Another version of the same argument is that the Japanese have gained a competitive edge on the U.S. in world markets because of their low defense spending. But this proposition is also essentially wrong. If the U.S. defense share of GNP comes at the expense of investment rather than consumption, the reduction of investment might indeed lower our productivity and competitiveness. But there is no reason, in principle, why we cannot design the taxes needed to support defense spending so as to depress consumption rather than investment. If we do otherwise, the resulting reduction in investment is our own choice and is not something inherent in defense spending. In any event, in the postwar period there is little evidence that the share of business investment spending in GNP moved up and down in close accompaniment to changes in the defense share (which ranged between 5 and 10 percent of GNP).

It might be argued that the heavy call of a large defense budget on skilled manpower, scientific talent, and R&D facilities penalizes the technological capabilities of civilian industries. There is probably something to this argument. But against this disadvantage must be offset the spillover of defense-financed technology into the civilian sector. A large defense budget for procurement and R&D in all likelihood works to the advantage of some civilian industries and to the detriment of others. It is probably no accident that Japanese competitiveness and exports are particularly strong in consumer goods while the U.S. is a strong world competitor in fields more closely related to defense, such as aircraft, computers, large scale communications equipment, and the like.

There is nothing inherently inflationary or productivity-lowering in defense spending, therefore, that should get in the way of having the level of defense budget the nation thinks required for its national security, so long as it is willing to pay for the higher defense in lower consumption spending. But there are some special characteristics of the defense budget, not generally shared by other parts of the budget, that give rise to economic problems when attempts are made to change that budget rapidly.

In the first place for a very large part of the finished goods and their components which are sold to the defense establishment there is only one market -- the military. While many non-specialized parts, materials, and skills are bought by military prime contractors, government business constitutes a large fraction of the sales of many of those contractors. With some exceptions (space, nuclear energy) that is not generally true for any other large component of the federal budget. A $20 billion dollar increase in defense and R&D procurement, for example, represents less than 1 percent of GNP, but a very large increase in the output of the major industries supplying defense -- 10 to 20 percent for industries like ordnance, aircraft and communications equipment. A $20 billion increase in government transfer payments, on the other hand, for such things as social security and unemployment compensation, will be spent by the recipients on the whole gamut of goods and services that Americans normally buy. It is unlikely that any one industry would be faced with an increase of more than 2 percent or so in its sales and output. Hypothetically the government could increase its purchases from some specialized civilian sector (e.g., a unique chemical) so rapidly as to have a heavy impact on a particular industry. But even should this occur, the amount involved is unlikely to be of such magnitude as to have economy-wide effects. (An exception was the impact on health-care costs of the introduction of Medicare in the late 1960s).

Unlike other areas of the budget, therefore, a very rapid increase in military spending requires an abnormally large expansion in the output of a particular group of firms or industries. And this, in turn, is likely to lead to "bottleneck" cost increases: costs rise in defense firms as they scramble to increase output more rapidly than can be efficiently managed; and prices are bid up for materials, components and labor skills specialized in defense production.

Two consequences follow from these bottleneck cost increases. First, the Pentagon ends up with substantial cost overruns; and second, civilian industries face rising costs to the extent they use the scarce materials and labor whose prices have been bid up. Almost by definition, however, those particular materials and labor skills that are so specialized to defense as to be subject to bottleneck price increases, are not likely to bulk so large in the costs of other firms as to be a major inflationary factor for the economy as a whole. The principal problems that arise from an attempt to expand the defense budget too rapidly are the harmful effects of the resulting cost-overruns on the military establishment and the nation's national security. I will elaborate on this point later on in the testimony.

Because rapid changes in defense spending, unlike changes in other parts of the budget, have large impacts on a well defined group of industries defense spending has several other special characteristics. When large increases in the defense budget are enacted, and even before contracts are bid upon or let, managers of defense firms can begin to respond to almost certain prospects of substantially enlarged markets. Initial decisions about R&D and personnel expansion can be made. Inventories can be stockpiled and financing tentatively arranged. An equivalent dollar expansion of civilian government spending, on the other hand, is diffused so widely among civilian industries that, however large the national impact, it usually is both small and unpredictable for the individual firm. Similarly, prospective increases in defense business, forecasted to flow from a rapid expansion of defense budget, are often large enough to require individual defense firms to invest in capacity expansion. A similar advance impact of government spending on investment is much less likely from a corresponding rise in civilian government spending. While the very long lead times typical of defense contracts are often thought to slow down and moderate the economic impact of large changes in defense spending, the paradoxical fact is that the relatively narrow industrial concentration of defense procurement probably causes it to generate at least some of its economic effects rather quickly.

II. The Prospective Buildup

The Carter Administration had planned an increase in real (inflation adjusted) defense outlays between 1981 and 1986 amounting to a substantial 5 percent per year in budget authority and outlays. The Reagan Administration significantly increased the pace of the planned expansion in real budget authority and outlays to some 9 percent per year. While these are large increases -- about double the very large growth the Administration has optimistically forecast for the economy as a whole -- they do not raise the share of the defense on GNP by a large amount:[1]

Share of Military Budget in GNP
(in constant 1980 dollars)

(fiscal years, percent)

	1981	1985	Increase
Budget authority	6.1	7.5	+1.4
Outlays	5.5	6.8	+1.3

As CEA Chairman Weidenbaum pointed out in his testimony here last week, the 1-1/2 percentage point rise over four years is substantially smaller than the more than 2 percent rise that was accomplished in 3 years (1965-68) during the Vietnam war buildup. And the 1981-85 rise in military spending as a share of GNP is dwarfed by the rise from 4-1/2 to 12-1/2 percent that occurred between 1949 and 1952. Viewed in the context of the total economy, the planned shift in resources to defense over the next four years is not very great.

But if we dig deeper, the relative increase in military spending over the next four years looms larger than it first appears. Gary

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1. These numbers and those which follow are based on the March defense budget recommendations of the Administration, prior to the recent proposal for a small cutback in defense outlays. Detailed data are not available on this latest request. And the total cut, by 1984, amounts to only $6 billion -- 2-1/2 percent of the 1984 defense budget and 0.16 percent of GNP. The estimate of the share of GNP taken by the military budget assumes an average 3-1/2 percent annual growth of real GNP between fiscal 1981 and 1985, and the Administration's inflation forecast for both the economy and DOD.

Wengloswki, Partner and head of research for Goldman Sachs, has pointed out that the current buildup is quite different from the one which occurred in the Vietnam war. The Vietnam buildup was importantly an expansion in the size of the armed forces -- the DOD payroll ballooned. While failure to finance the Vietnam war with a tax increase was inflationary, the personnel oriented nature of this buildup tended to minimize bottleneck problems. During the current buildup, however, the size of the armed forces will be kept constant. The increase in the defense budget is much more heavily concentrated in procurement and R&D than was the case during the Vietnam war. Wenglowski, who will, I understand, appear before this Committee shortly, computed the DOD nonpersonnel budget as a share of real GNP less services -- i.e., the share of "goods-producing" GNP absorbed by the military budget. For purposes of thinking about potential bottleneck problems, this is obviously a more relevant base than total GNP. Wenglowski finds that the share so computed rises from 5.9 percent in 1981 to 10.0 percent in 1986. The share almost doubles in five years. During the Vietnam war, on the other hand, nonpersonnel defense outlays as a share of GNP less services rose by only 2.7 percentage points, from 7.9 to 10.6 percent.

I have made similar calculations to buttress the point that the increase in real defense spending over the next several years for items other than payroll, is much larger relative to the economy's industrial base, than would be indicated by a simple comparison of the total defense budget to total GNP. Between fiscal years 1981 and 1985:

1. DOD budget authority for items other than personnel, in real terms, will rise by an average of 14 percent per year
2. DOD budget authority for procurement and R&D, in real terms is scheduled to rise by an even larger 18 percent per year; over the four year period budget authority in real terms will grow by 80 percent
3. The growth of real nonfarm "GNP less services" over the next four years will be about $195 billion; real growth in the nonpersonnel defense budget, (primarily for procurement, R&D, construction and purchases for operation and mantainenance) will be some $60 billion.[2] This implies the rather startling conclusion that some 30 percent of the increase in the "goods producing" GNP over the next four years will go to the military. In fiscal 1981 the base level of the nonpersonnel defense budget averaged only 6 percent of nonfarm GNP less services, and so the relative magnitude of the rise is very large indeed.

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[2] Both GNP and budget data are expressed in dollars of constant FY 1980 purchasing power, based on Administration inflation estimates.

The procurement oriented nature and very rapid pace of the planned defense buildup will place substantial strains upon the relatively limited sector of industry that produces for the defense department. These strains promise to give rise to substantially larger price increases for military goods than those on which the defense budget is now based.

For reasons spelled out earlier the major harm from these prospective military price increases does not lie principally in their macro-economic impacts. Even after the current buildup, military procurement and R&D will still account for only a modest fraction of the nation's industrial base. Given substantial excess industrial capacity, a relatively plentiful materials supply, and today's 7-1/2 percent unemployment level, the bottleneck problem in the defense industries will probably not add to cost pressures in the private economy in a major way -- although there will be exceptions. But an 80 percent rise in the real volume of military procurement and R&D in the short space of four years will give rise to shortages within the defense industries themselves, of skilled labor and specialized components. Capacity will be strained and managerial oversight stretched thin. The likely result will be substantial cost overruns in the defense budget, requiring sharply enlarged funds if the Administration's defense plan is to be realized.

III. The Implications

The consequences of attempting to double the real procurement and R&D budget over the next five years may be more military than economic. The main result may be to squeeze out of the defense budget a large part of the non-glamorous but vital increases in spending for the deployment, readiness and combat capabilities of our conventional forces.

This result is likely to occur for a combination of reasons: First the magnitude of the cost overruns may be very sizable. As the defense analysts for Data Resources Inc. have recently pointed out, price increases in the defense budget, even in recent years when defense was not increasing sharply (and even including oil prices), have been much larger than for the economy as a whole, a fact which does not appear to have been taken into account in the current defense budget projections. Second, the recent history of cost overruns will be substantially magnified by the bottleneck problems associated with the very rapid pace of the procurement expansion as discussed above. Third, I think it highly unlikely that the political climate over the next four years will support defense appropriations that will continue to escalate well beyond an increase that is already very substantial. That is, the cost overruns may well have to be "swallowed" elsewhere in the defense budget.

The inevitable collision between substantial cost overruns on procurement contracts already underway and a defense budget total that is unlikely to be revised upward will produce a sharp reduction in funding for those particular items in the budget that can be pared and do not appear to threaten major weapons systems. The absolutely top priority given by this Administration to strategic procurement narrows even further the areas eligible for cuts. If past history is any guide, the cuts are likely to come out of investments in standard equipment for the ground forces, and in such things as ammunitition reserves, fuel used for training flights, live use of expensive weaponry in combat training, and the whole gamut of items that can be reduced quickly in the face of a budget squeeze and whose consequences are not so easily seen or measured.

The end result of the large cost overruns that are likely to accompany the very rapid planned buildup in procurement spending may well be to leave our armed forces with too small a quantity of very high priced weapons, and with reduced readiness and less capacity to deploy, use, and maintain them in combat. While the total defense budget will have risen sharply, the increases for some of its most critical elements may have been squeezed out.

Let me again stress that the problem does not arise from the level to which the defense is planned to rise. If the national security, in its broad context, requires it then the nation can adapt to this level with appropriate monetary and fiscal policies. The problem stems not from the level but from the rapid pace of the increase in the defense budget. And the harmful consequences of an excessive pace are not so much economic as military.

The Congress is now wrestling with the difficult problem of how to adjust its long run fiscal policy to the fait d' accompli of a tax cut that is too big. Barring further action to raise taxes or cut spending the budget deficit in 1984 will amount to $90 or $100 billion. I do not believe that the fate of the nation hangs on your ability to bring the budget into balance by 1984. But I do think it is important to take action to reduce the prospective deficit by 1984 significantly below the $60 billion level at which it is now running. Without such action, too much of a burden will be placed on monetary policy, and interest rates over the next several years -- which even in the best of circumstances will be higher than we are used to -- will be made higher still.

If I am right about the harmful effect on our military structure of too rapid a defense buildup, then both national security and economic considerations call for a stretch out in that buildup (in areas other than those addressed to investment in the training, deployability and combat readiness of our conventional forces). I do not believe, of course, that all or even most of the required fiscal tightening can come from slowing the pace of the military budget increase. (In my judgment some revenue increases are clearly necessary). But the cuts which the President has suggested -- amounting to only 2-1/2 percent of defense spending by 1984 — are only tokens. I do not have a particular target to offer. I am convinced, however, that a larger effort is warranted.

DIFFERENCE OF DEFENSE EXPENDITURES UNDER THE CARTER AND REAGAN PROGRAMS

Representative HAMILTON. Mr. Schultze, if I understand you correctly, what you conclude is that we will spend more money for defense and get less from it under the Reagan program than we would have I presume, under the Carter program.

Mr. SCHULTZE. If not less of it, then—I'm trying to get the right word—"wrong" of it. I'm not sure you'd get exactly less, but you won't get it where you really need it. You may get less of what you really need.

Representative HAMILTON. You say that the end result may very well be that we leave our Armed Forces with too small a quantity of very high-priced weapons and with reduced readiness and less capacity to deploy, use, and maintain them. Right?

Mr. SCHULTZE. That's right.

Representative HAMILTON. Can all these problems about bottlenecks and cost overruns and so forth be avoided if we used the projected increase in the Carter budget which, as I recall, you said was about 5 percent per year?

Mr. SCHULTZE. I don't know whether I can responsibly say all. Probably not. It's still a fairly rapid increase. But I think you would significantly reduce and minimize those problems; although I must say there's no way I can say that any given number is going to get rid of all of them.

Representative HAMILTON. You'd certainly reduce the chance of getting the company bottleneck problems that you referred to, as well as the cost overruns.

Mr. SCHULTZE. That's correct, sir.

IMPACT ON INFLATION OF THE REAGAN DEFENSE BUDGET

Representative HAMILTON. Have you tried to figure out what the impact is on inflation of the defense budget of the Reagan package for unemployment or any of the other leading indicators?

Mr. SCHULTZE. First, I haven't.

Second, I think I'm going to have to give you an economist's answer. It depends on what you mean by the "effect of the defense budget." If you mean the defense budget in and of itself, that's one thing. If you mean the defense budget in the context of the tax cut that's been taken, that's another question.

The first question, the defense budget itself, the impact on inflation from the speed of this buildup, as I said, will not principally be in raising the overall inflation rate very much, I don't think.

Having said that, if you then ask the question about overall fiscal policy and the defense buildup in the context of the rest of the budget, including tax decisions—and I think we're facing a budget deficit that by 1984 is going to be too large because the tax cut was too big for a budget which had this big a defense buildup in it.

Representative HAMILTON. I take it you fundamentally disagree with Mr. Weidenbaum's testimony last week before this subcommittee in which he emphasized the slow and moderate buildup would really not have much of an impact on the economy.

Mr. SCHULTZE. Again, I guess you would have to say that if you take it in the context of the tax cut, that's right, I disagree with that conclusion.

If you take it again in terms of, will the speed of the buildup itself give you a lot of overall inflationary problems, as I say, I don't think it will.

REAL COSTS IN THE REAGAN DEFENSE PROGRAMS

Representative HAMILTON. What about the real costs in the Reagan defense program? Some say they are seriously underestimated.

Do you think that's the case?

Mr. SCHULTZE. Yes. Although I don't know how much. I'd say they are underestimated for two reasons, one of which I can't really speak to, but I think you'll have a witness who can. I mentioned it in the testimony.

There is apparently some evidence that inflation in the defense budget has been running faster by a noticeable amount over the inflation in the economy as a whole. To the best of my knowledge, in the projections of the budget which the administration has made, that fact isn't taken into account.

Representative HAMILTON. We've got a chart up there [indicating] table I shows the DOD/GNP price deflators. So there is quite a difference through the years.

Mr. SCHULTZE. The second reason I think there would be some overruns is the reason I brought out. I think with this rapid a buildup, an 80-percent increase in procurement and R. & D. over 4 years—if I remember correctly, it's about a doubling in 5 years—it's going to bring some increases in prices for that reason. It's just a very, very rapid buildup.

CAPACITY IN THE DEFENSE INDUSTRY

Representative HAMILTON. Have you looked into the question of capacity at all in the defense industry?

Mr. SCHULTZE. No, sir, I have not.

Representative HAMILTON. You don't have any judgment on that?

Mr. SCHULTZE. No.

Representative HAMILTON. We've gotten a lot of criticism about the capacity, not so much at the contractor level but the subcontractor level, that has raised a lot of questions.

So you don't have much doubt at all about the fact that bottlenecks will occur in the economy under the Reagan budget and——

Mr. SCHULTZE. In the defense sector of the economy, that's right.

Representative HAMILTON. Could you be more specific as to where those bottlenecks might occur?

Mr. SCHULTZE. No, sir, I don't think I can. I think that would take—it's not to say it couldn't be done. I haven't had the time to do it. But it would take a much more detailed—a very detailed look at industry to see where it's coming.

Again, if somebody tells me, which the numbers do, that the real inflation adjusted value of overall procurement and R. & D. has gone up by 80 percent in 4 years, then my commonsense tells me there are going to be a number of particular areas where it's got to go up, then, a lot more than 80 percent, like 150 or 200.

Then my commonsense tells me production can't be expanded that rapidly efficiently, even though I don't know the particular answer.

HOW HIGH WOULD THE DEFENSE BUDGET HAVE TO RISE TO GET INFLATION?

Representative HAMILTON. How high would the defense budget have to rise? What over types of things would have to occur in the economy to add so much to aggregate demand that you get inflation?

Mr. SCHULTZE. Will you give me a tax increase to go along with the budget? It makes a big difference.

Representative HAMILTON. We have to operate under present law, it seems to me. We've got a tax bill written into law right now.

Mr. SCHULTZE. Well, one way to look at that, therefore, is, that with the current tax law, the current defense buildup, and no further budget cuts beyond those which ~~were~~ in the reconciliation and with a fairly good economy but one that isn't quite as rosy as the administration forecasts—as I said in my testimony, you know you're facing a budget deficit by 1984 of, let's say, $90 billion, in that ballpark. I've seen higher estimates; I've seen lower estimates.

I think a large part of the impact of that is going to be not quite so much inflation—it will have some impact—but interest rates.

Second, I think it would be good for the economy, it would be good for investment, it would be good for a lot of reasons, to reduce that deficit significantly, even though I don't put much store by really trying to get a balance as such. But I must say, under current conditions, while there is an inflationary impact, from a budget deficit that will grow beyond what we already have, given monetary policy, a very large part of the impact is going to be interest rates.

TAX INCREASE

Representative HAMILTON. I take it from your remarks, generally you think we ought to have a tax increase.

Mr. SCHULTZE. I think, No. 1, we shouldn't have had so much of a decrease. But, yes, sir, I think we ought to take some of it back—not all of it; the tax cut was warranted; it was necessary; it's $150 billion worth by 1984, and it was just too big.

Representative HAMILTON. How would you handle it at this point? Change the law? Deferral? Would that be the best way to get your tax increase? To defer some of the cuts?

Mr. SCHULTZE. I must say one of the nice things about the last 9 months is that I haven't had to be all that precise about how to make the world better. But if you pushed me, what I would do right now, if I were in a position to do it, would be to put some of my people to work very quickly telling me what would be the economic impact of deregulating natural gas and putting a stiff windfall tax on it.

My tentative judgment, not having had a chance to do that kind of study, is that it would be desirable economically, and it would bring in a gosh-awful lot of money.

My own next preference would be to look for several areas where you could increase taxes and have an anti-inflation effect. My enthusiasm for promoting these probably would go down if I had to run for reelection—but medical deductions to some extent and deductions for interest on consumer installment debt are two candidates for reduction.

DIFFERENCE IN DOD AND GNP PRICE DEFLATORS

Representative HAMILTON. Calling your attention to table No. 1 up there for a moment and the difference in the DOD and GNP price deflators, when you dealt with the defense budget, did you in your projections make a difference in the inflation rate between defense and the GNP as this administration has done?

Mr. SCHULTZE. I don't remember. That is, I dealt with the defense budget in two capacities—back in the 1960's as Budget Director when inflation wasn't big enough to worry about; we were running about 1½ a year, and it didn't make much difference then.

Lately, in the Carter administration, the CEA gave OMB the basic inflation numbers. They gave us back the defense inflation numbers. I don't remember the differential, but my guess is, they probably didn't mark it up either. My guess is that the differences in the deflator didn't show.

There is a problem. First of all, I don't want to talk about this very much. You have another witness coming up who knows those numbers well. But there is a policy problem.

Suppose you look at past history and say to yourself, "It's a fact that the DOD deflator went up more than inflation generally." Now let's take that into account in our budgeting. Therefore we're going to raise appropriations further and recommend a budget for DOD based on that differential.

Well, you know, you've given DOD every incentive in the world to mark up their estimate of inflation. And I'm not sure it's good practice.

So I must say, if I were in the position of having to forecast defense budgets in the future in the sense of literally having to give the Department of Defense the appropriations which went with my forecast, I would be somewhat hesitant to allow for a differential even though I know it's there. I think maybe what you have to do is provide an appropriation that assumes zero difference, except maybe for oil, but let everybody know that this is a very optimistic assumption.

EXPERIENCE WITH DEFENSE BUDGETS

Representative HAMILTON. What's your experience with defense budgets? I have the impression, at least, that it's just an inexorable upward bias in the figures—that is, the figures that you get just creep up.

Is that your own experience in budgeting?

Mr. SCHULTZE. No, sir. I think it's more like an elephant. You get an elephant moving in any direction, it's hard to turn around. So when the defense budget is going downhill and you want to turn it around, it may take you an extra year or so. You may get defense "underruns."

You may recall—I don't have the dates exactly—in the last year of the Ford administration and the first 2 years of the Carter administration, we and they were worried about, of all things, underruns—that is, the total budget and in part the defense budget, was actually coming in under the original estimates. Now that is in a period when the defense budget was going downhill.

Conversely, I think once you get it moving up, you've got problems of overruns. It comes in higher once the momentum gets going.

BUDGET AUTHORITY FIGURE

Representative HAMILTON. The key figure for us to look at, I suppose, then, is the budget authority figure?

Mr. SCHULTZE. It is certainly a key figure.

Representative HAMILTON. That's the figure that drives the future direction of defense spending.

Mr. SCHULTZE. Yes, sir, that's right. As I said in my testimony, unlike other parts of the budget, when the Defense Department gets a big appropriation and budget authority increase, since it impinges on a well-known, defined group of industries, it can have anticipatory effects in a fairly big way.

BOTTLENECKS IN THE DEFENSE INDUSTRY

Representative HAMILTON. What about this bottleneck problem? Do bottlenecks already exist in the defense industry, or do you think this is something that will develop as the spending goes up? The spending hasn't started to go up yet. Maybe it did last week.

Mr. SCHULTZE. As I was going to say, I don't have any good measures. Defense spending has turned around. If you notice the chart, about 1979, it's now moved up—particularly if you measure the nonpersonnel part which is the red line—I presume that's Mr. Kenglowski's data—it's already gone up a pretty good bit, but it had also come down earlier. I suspect there was some excess capacity around.

I suspect there was, for the first part of that curve at least, enough room to expand some, but it's going to get tougher and tougher and tougher the further up you climb.

Representative HAMILTON. One of the things that impresses me in looking at that chart over there—the first one where defense is indicated as a percent of GNP—is the rather jagged nature of it, up and down. We're often told that one of the characteristics of the Soviet defense budget is that it's a very steady gradual increase year after year. I think Secretary Brown used to say it was 3- or 4-percent real increase, as near as we could judge it for the past 25 years.

Apparently we follow a very different course in our defense spending, and I suspect that puts into defense spending all kinds of production economic problems, does it not, because it's not reliable, it's not dependable, it's not predictable?

Mr. SCHULTZE. I think that's probably true. I'm not expert in defense procurement markups, but I can't imagine that there isn't a higher markup in an uncertain business.

Representative HAMILTON. Do you see any chance at all—getting back to macroeconomic questions for a minute—that we'll have a lower deficit in the next few years under the present law?

Mr. SCHULTZE. Under present law? Very little chance. Not zero, but it's pretty small.

THE REAGAN ADMINISTRATION'S ECONOMIC POLICIES

Representative HAMILTON. Can you give us, just for the record, a brief assessment of the Reagan administration's economic policies?

Mr. SCHULTZE. How about one sentence. Which is, there's nothing wrong with the administration's claims for its economic policies that division by a factor of 10 wouldn't cure.

I don't mean to be flip, but in my judgment, Mr. Chairman, a tax cut was warranted; a tax cut for some of the middle- and upper-income brackets was warranted since marginal tax rates had gotten out of line; a good thorough scrubbing of the Federal budget was warranted. The Reagan administration has done that. They're to be congratulated.

But they did two other things. First, they went too far. The last—I don't want to be too precise, but I'd say the last $50 billion of that tax cut by 1984 is too large. And, second, they claimed too much for it.

Representative HAMILTON. Second what?

Mr. SCHULTZE. The claims for the program were too much. While I think a good part of the tax cuts were needed, the claims as to what it was going to do for the economy were too large.

RATIONALE OF SUPPLY SIDE ECONOMICS

Representative HAMILTON. That means you have doubts about the rationale of supply side economics?

Mr. SCHULTZE. Yes, sir, I do.

Representative HAMILTON. Thank you very much, Mr. Schultze. We appreciated your testimony greatly this morning. It's kind of you to be with us. Thank you, sir.

I'd ask the next witnesses to come forward if they would.

The subcommittee will be pleased to hear now from two defense specialists, George Brown, the vice president of Data Resources, Inc., and their Defense Economic Information Service.

Mr. Brown previously was on the faculty of the Naval War College and has an extensive background in defense research.

Following Mr. Brown will be Jacques Gansler, who is vice president of the Analytic Sciences Corp. and former Deputy Assistant Secretary of Defense.

Mr. Gansler is the author of "The Defense Industry," published by the MIT Press in 1980.

Mr. Brown, we have your prepared statement. It will, of course, be inserted in the record in full. We'd appreciate your summarizing that statement at the present time.

We look forward to your testimony.

STATEMENT OF GEORGE F. BROWN, JR., VICE PRESIDENT, DATA RESOURCES, INC., WASHINGTON, D.C.

Mr. BROWN. Thank you, Mr. Chairman.

Let me summarize some of the key points I wanted to make in this testimony. What I've done is constructed simulations of the U.S. economy at the macroeconomic and at the industry levels of detail under two alternative scenarios with regard to defense spending.

In the high defense scenario, I've put together a spending program roughly consistant with the real defense spending goals of the administration. Over the 1982 through 1986 period, the real growth in defense spending averages just about 9 percent annually.

In the low defense alternative, while I've included spending sufficient to induce positive real growth in defense expenditures, the average annual growth rate is substantially lower, about 5½ percent annually. In both cases, I've adjusted nominal spending levels in order to maintain these real growth rates. These imply fairly significant nominal growth rates for the defense budget over the 1982 through 1986 period.

In both simulations, nondefense spending was assumed to decline at an average rate of about 5 percent through 1984 and remain constant thereafter, and also to include all of the corporate and personal income tax provisions of the Economic Recovery Act.

A brief summary of the macro impacts of these two simulations is contained in table 2 of my prepared statement. In both situations, we see a fairly healthy economic picture through the 1986 period.

Real GNP grows at a positive rate of about 3½ percent in the low defense alternative and marginally higher in the high defense alternative. There are positive impacts on investment over this period, with real nonresidential investment growing in the 4- to 5½-percent range under both simulations.

This reflects, in large part, the impacts of the corporate income tax provisions of the recently passed Tax Act. There is some improvement in both cases on the unemployment rate, declining from over 7 percent in 1982 to 5½ percent in the high defense alternative in 1986, and just over 6 percent in the low defense alternative.

There are, however, some aspects of the macro economy that cause concern during this period. The Federal deficit remains high in both simulations. From its level in the $60 billion range in 1982, it increases to over $80 billion in 1984, before beginning a slight decline, under the high defense spending scenario.

Under the low defense spending scenario, the deficit rises to over $70 billion by 1984 and then again begins a gradual decline.

Inflation is impacted, particularly in the latter parts of this period. Through 1984, the higher levels of defense spending have only a small impact on inflation. In the mid-1980's, however, the impact rises a bit, approaching three-fourths of a percentage point in 1985 and 1986.

The prime interest rate also remains reasonably high over this period and is about 1 percentage point higher under the high defense spending alternative. These are fairly substantial macroeconomic impacts, and they impact significantly on such sectors as housing that are very sensitive to interest rates and inflation.

The impacts on industrial production are also substantial. I've included tables within my prepared statement which show the growth rates in some indices of industrial production, many of which—for example, ordnance, aircraft and parts, electronic components—show double-digit rates through the first half of the 1980's under both the high and lower defense spending alternatives.

When one looks at the impact on particular key four-digit industries, we find the effects of the higher levels of defense spending are substantial. Overall growth rates for total industry output, including the defense and nondefense components, are increased by about a percentage point, on an average basis, through the 1982 through 1986 period. When one looks at the defense component of sectoral output specifically, an even larger output growth rate is shown.

As you can see in table 4 of my prepared statement, for the 50 key defense supplying industries, the higher levels of defense spending add 3 to 4 percentage points to the average annual growth rates for defense output through the 1982 through 1986 period.

Most of the growth rates shown are in the double-digit range, suggesting a fairly dramatic expansion called for under the higher defense spending scenario. One can look at these high growth rates and conclude there are probably pressures on both inflation and on industrial capacity.

Table 4 also suggests some of the sectoral rates of inflation under both the low and high defense spending alternatives.

The mix of industries which are included among the key defense supplying industries include some, like semiconductors and electronic computing equipment, that have very low average rates of inflation. But most of them, as you can see, have inflation rates above those expected for the overall economy. This, as I've noted before, has an impact on the rate of inflation that will actually impact on the defense budget.

Table 5, which reflects statistics similar to those included on the two charts before the committee [indicating], shows projections of the rates of inflation for major components of the noncompensation portions of the defense budget.

Through 1986, we see defense inflation remaining significantly higher than that projected for the economy as a whole either by our own simulation or by the administration's projections.

While there is some modest relief from the high energy price increases that have impacted on the budget in the last 2 years, the other components—services, durables, and structures—compensate for that in the near term. And the higher energy-induced durables rates of inflation in the mid-1980's again keep the defense inflation rate rising above 9 percent annually.

To examine questions of industrial capacity, the simulation results are summarized in table 6, in which we look at projections of the Federal Reserve's indices of capacity utilization, shown for key sectors of the economy under the two defense funding scenarios.

From the relatively low levels of capacity utilization present today—about 80 percent—we project increases in both cases. Under the higher defense spending scenarios, we see the indices of capacity utilization growing to about 90 percent by the mid-1980's. This is a level higher than that achieved at any time since 1966 for these aggregate level indices.

However, I think there are some reasons for believing that industry can positively respond to the challenge included both in the low- and high-defense spending scenarios.

Table 7 looks again at key defense supply sectors and presents several statistics related to capacity and the output that will be required under the 1982 through 1986 period.

First, the growth rate differential between that recently experienced and that projected for the 1982 to 1986 period is computed. While there are some large differentials and a 5-percent difference in the average annual rate of growth, many of these occur in what would be termed the healthier sectors of the U.S. economy.

Also tabulated there is a measure of 1986 real output relative to the previous maximums in real terms obtained by those sectors. One sees increases, ranging from trivial amounts through 50 and 60 percent in the level of real output increase over the previous maximum.

Again, there are many industries that show a very large percentage increase, but these are generally concentrated among the more healthy sectors of the economy.

And when you combine the growth rate differentials with these output comparisons, one sees relatively few cases where you can predict major problems for the economy.

Finally, in table 7, I've looked at the nondefense components of output for the key 50 defense supplying sectors. While the overall macroimpacts induced by the higher levels of defense budget do have dramatic effects on some sectors such as housing, they do not appear to have dramatic negative effects on the nondefense output from these major 50 industries.

One of the principal qualifications I would add, in summary to this, is that these depend fundamentally on the robust levels of investment suggested within these simulations. In the past, medium-term defense spending projections have been viewed with some skepticism. And to the extent that industry fails to believe the signals included within the budgets and fails to expand capacity, I would see some of these conclusions being reversed.

Thank you, Mr. Chairman.

Representative HAMILTON. Thank you, Mr. Brown.

[The prepared statement of Mr. Brown follows:]

PREPARED STATEMENT OF GEORGE F. BROWN, JR.

DEFENSE SPENDING AND THE 1982-86 ECONOMY

At the same time that national security concerns dictate a significant increase in the nation's expenditures for defense, the persistence of our economic problems and the orientation of the Administration's fiscal policy dictate the careful examination of any programs which increase Federal expenditures. Plans to reverse the steady decline in the defense share of Gross National Product and achieve positive real growth rates in defense spending clearly add to the problems which must be confronted in bringing the Federal budget into balance. From a defense perspective alone, concerns are also present regarding the capacity of the industrial base to efficiently deliver the systems required for a meaningful build-up.

To examine the impacts of defense spending upon the economy and the capacity of the economy to support these spending plans, economic simulations were constructed using DRI's Macroeconomic Model and Defense Economic Impact Modelling System. Two parallel simulations were constructed, using Federal Government spending assumptions as detailed within Table 1. In the "High Defense" case, spending levels were assumed generally consistent with the real purchases presently planned by the Administration. Over the 1982-86 period, these plans yield a real growth in defense spending averaging 9.23% annually. In the "Low Defense" case, spending levels were assumed to be substantially lower, but still sufficient to yield an average annual real growth rate of 5.56% over the 1982-86 period. Given our projections of the impacts of inflation on defense spending, these two cases each require significantly higher nominal growth rates for defense spending--18.2% and 14.0%, respectively. In both simulations, real non-defense Federal spending is assumed to decline at an average annual rate of 5.1% through 1984 and to remain essentially flat thereafter. The simulations also reflect all of the corporate and business income tax provisions of the Economic Recovery Act.

Table 2 presents a summary of key macroeconomic impacts of the two defense spending patterns. Positive impacts from the higher levels of defense spending are seen with respect to the growth rate for real Gross National Product, the unemployment rate, and (aided by the changes to the tax code) the growth rate for non-residential fixed investment. The problem of a large continued Federal deficit, present even in the lower defense spending case, is compounded by the higher spending levels. Over the 1982-86 period, these higher levels of defense spending add $62 billion to the cumulative deficit. While inflation and interest rates drop from their recent levels in both simulations, they remain somewhat higher under the higher defense spending alternative. Sectors such as housing are particularly impacted under this alternative.

The impacts of the higher defense spending levels on industrial production are substantial, both generally and for particular economic sectors associated with defense production.' Table 3 compares various Indices of Industrial Production under the two scenarios. The growth rate in the overall index remains about one percentage point higher under the High Defense alternative, and the differential grows even larger for key high technology sectors of the economy. Table 4 provides expanded detail regarding the impacts of the two scenarios on industrial production, showing the average annual real growth rates for the top fifty defense supplying industries. Both the growth rates for total industry output and for the defense component of industry output are shown. The Defense Component growth rates are typically three to four percentage points higher under the High Defense alternative. The differentials in the Total Output growth rates, while generally positive, reflect the importance of defense to the sector as well as the impacts of the changed economic environment on demands from other sectors of the economy.

Table 4 also provides projections of sectoral inflation rates under the two scenarios. Generally, the list of key defense supplying sectors includes many which show inflation rates above those prevailing elsewhere in the economy. As is the case with the aggregate measures like the GNP Deflator and the CPI, the High Defense alternative adds to the inflation rates projected for these sectors.

The higher levels of inflation prevalent in the defense supplying sectors present an additional problem with respect to the levels of spending necessary to implement the Administration's defense goals in real terms. Table 5 presents projections of the Defense Deflator and its key components. As has been the case in the past, the Defense Deflator will remain well above the GNP Deflator. The spending levels necessary to maintain real defense growth rates in the face of these levels of inflation will place further pressures on the budget. We project an inflation gap of $47.6 billion between 1983-86 as a result of the differences between these inflation levels and those employed in formulating the budget for this period. The higher rates of inflation in the non-durables, services, and structures components of the defense budget will place particular pressures on defense procurement programs.

Higher defense spending levels will impact significantly on capacity utilization rates as well. Table 6 presents forecasts of the Federal Reserve Board's various Indices of Capacity Utilization under the two scenarios. By the mid-1980s, these utilization rates move above 90%, a notable change from the 80% utilization rates presently achieved. The impacts are distributed fairly uniformly across the principal sectors of the economy.

Table 7 presents further evidence relating to the increased demands that will be placed upon individual industrial sectors by the higher levels of defense spending. The first column of Table 7 shows the real growth rate differential for 1982-86 versus that achieved for 1973-81 implied by the High Defense alternative. Many of the key defense industries must achieve real growth rates four or more percentage points higher than those recently achieved—and sustain these higher rates of output growth for the five-year period.

In that these growth rate differentials reflect the economic conditions of the 1973-81 period (including the low levels of defense spending which prevailed for most of that period) as well as the demands of the High Defense scenario, the second column of Table 7 compares, in real terms, the 1986 output demanded under this scenario with the maximum output previously achieved by each sector. Where this ratio is low, one might presume that the higher output levels can be achieved by re-employing idle plant, equipment, and labor to the extent that they remain in the base. In many cases, however, this ratio shows real increases above the previous maximum of 30% or more, suggesting a significant requirement for new investment and for increases in productivity. Given the high levels of uncertainty usually attached to medium-term defense spending projections, achieving these increases will demand considerable attention from government and industry alike, particularly in those sectors heavily dependent on defense purchases for growth.

The final two columns of Table 7 compare the real non-defense output levels (in billions of 1972 dollars) over the 1982-86 period under the two defense spending alternatives. There is generally no evidence from this comparison of any crowding out of non-defense demand as a result of the higher defense spending levels assumed under the first alternative for these sectors. This conclusion, of course, would be altered if the robust investment levels projected in the simulations were not realized.

TABLE I

REAL FEDERAL GOVERNMENT SPENDING
(Percentage Change)

	1982	1983	1984	1985	1986
Defense					
High	12.8	11.3	6.1	12.4	7.3
Low	5.9	6.2	6.2	6.0	3.8
Non-defense	-4.1	-8.5	-3.1	0.6	0.6

Source: Data Resources, Inc.

TABLE 2

MACROECONOMIC MEASURES

	1982	1983	1984	1985	1986
Real GNP (% Growth)					
High	3.0	4.1	3.7	4.2	4.0
Low	2.4	3.5	3.6	3.6	3.5
Federal Deficit (NIA)					
High	69.9	78.8	81.7	76.2	66.2
Low	64.0	69.5	72.1	57.8	47.4
GNP Deflator (% Change)					
High	8.1	7.7	7.3	8.2	8.6
Low	8.0	7.5	7.1	7.6	7.7
Consumer Price Index (% Change)					
High	7.9	7.7	7.4	8.0	8.6
Low	7.9	7.5	7.2	7.6	8.0
Real Non-residential Fixed Investment (% Change)					
High	3.1	5.8	5.1	5.3	5.1
Low	2.6	5.0	4.9	4.9	4.6
Prime Interest Rate					
High	18.7	16.0	14.1	14.5	13.4
Low	18.5	15.4	13.5	13.7	12.5
Unemployment Rate					
High	7.2	6.6	6.4	5.9	5.5
Low	7.3	6.9	6.8	6.5	6.3

Source: Data Resources, Inc.

TABLE 3

INDICES OF INDUSTRIAL PRODUCTION
(Percentage Changes)

	1982	1983	1984	1985	1986
Total					
High	6.0	6.6	5.1	6.0	5.5
Low	4.6	5.0	5.0	4.6	4.3
Ordnance					
High	14.4	16.7	8.7	19.0	13.0
Low	4.1	5.9	6.1	6.9	3.8
Communication Equipment					
High	7.2	7.8	5.4	7.7	5.3
Low	4.5	5.4	5.4	4.8	3.6
Electronic Components					
High	11.6	17.8	18.0	13.1	10.7
Low	8.8	14.2	17.9	10.2	7.8
Aircraft & Parts					
High	8.9	11.9	7.4	15.5	7.0
Low	2.3	5.7	6.9	8.9	4.3

Source: Data Resources, Inc.

TABLE 4

DEFENSE ECONOMIC IMPACT MODELING SYSTEM
IMPACTS OF HIGHER DEFENSE SPENDING ON THE TOP FIFTY
SUPPLYING INDUSTRIES
(AVG. ANN. % REAL GROWTH, 1982-1986)

RANK	INDUSTRY	TOTAL OUTPUT LOW	HIGH	DEFENSE OUTPUT LOW	HIGH	SECTOR PRICE LOW	HIGH
1	322. RADIO & TV COMMUNICATION EQUIP	6.18	8.23	8.20	11.76	7.55	8.25
2	335. AIRCRAFT	7.28	9.30	5.56	9.14	8.48	8.88
3	336. AIRCRAFT ENGINES & ENGINE PARTS	5.82	8.42	5.93	9.47	8.38	9.29
4	337. AIRCRAFT PARTS & EQUIP, NEC	6.03	8.36	6.22	9.73	9.17	9.58
5	385. MISC BUSINESS SERV	5.14	5.63	8.31	12.09	7.37	7.68
6	45. COMPLETE GUIDED MISSILES	6.03	8.99	9.32	13.13	9.20	9.60
7	375. WHOLESALE TRADE	3.86	4.23	7.38	11.13	8.07	8.37
8	324. SEMICONDUCTORS	11.87	12.73	11.77	15.51	1.91	2.46
9	181. PET. REFINING & RELATED PROD	1.15	1.83	9.33	13.13	11.56	11.90
10	338. SHIPBUILDING & REPAIRING	1.51	3.42	0.47	3.83	8.21	8.88
11	18. CRUDE PET & NAT GAS	1.03	1.72	7.76	11.46	12.97	13.38
12	381. REAL ESTATE	4.32	4.43	7.94	11.71	6.37	6.68
13	365. MOTOR FREIGHT	3.97	4.45	5.69	9.37	9.27	9.59
14	372. ELECTRIC UTILITIES	3.66	4.07	9.13	12.94	9.73	10.33
15	325. ELECTRONIC COMPONENTS, NEC	8.85	9.89	9.25	12.99	9.73	10.32
16	370. COMMUNICATIONS, EX RADIO & TV	7.34	7.84	10.69	14.55	3.61	3.91
17	213. BLAST FURNACES & STEEL MILLS	3.91	4.71	4.98	8.58	9.66	10.59
18	46. AMMUNITION, EX SMALL ARMS, NEC	5.73	9.30	5.73	9.41	7.30	8.20
19	388. EATING & DRINKING PLACES	2.71	3.01	7.01	10.74	8.45	8.88
20	387. MISC PROFESSIONAL SERV	4.58	4.96	8.05	11.82	9.11	9.43
21	44. MAINTENANCE & REPAIR, OTHER	3.08	3.19	8.70	12.49	9.41	10.31
22	161. INORGANIC & ORGANIC CHEM	4.93	5.31	8.80	12.57	9.50	10.54
23	366. WATER TRANS & RELATED SERV	4.58	5.12	5.08	8.72	4.84	5.15
24	291. ELECTRONIC COMPUTING EQUIP	11.63	11.73	11.09	14.97	2.99	3.54
25	40. NEW MILITARY FAC.	10.27	14.11	10.27	14.11	9.89	10.07
26	367. AIR CARRIERS & RELATED SERV	5.31	5.77	6.29	9.97	8.49	8.81
27	290. MISC MACHINERY	4.79	5.63	6.09	9.79	8.77	9.48
28	382. HOTELS & LODGING PLACES	4.09	4.44	6.48	10.20	7.54	7.50
29	333. MOTOR VEHICLES	4.35	5.38	3.57	7.12	6.49	6.89
30	363. RAILROADS & RAIL-RELATED SERV	4.49	5.00	6.22	9.92	8.59	9.35
31	386. ADVERTISING	4.20	4.52	7.52	11.27	7.37	7.68
32	345. ENGINEERING & SCIENTIFIC INSTR	4.50	6.01	3.58	7.05	6.59	7.69
33	334. MOTOR VEHICLE PARTS & ACCESS.	4.13	5.06	4.88	8.49	8.65	9.05
34	373. GAS UTILITIES	-0.48	-0.16	7.75	11.50	17.21	18.02
35	47. TANKS & TANK COMPONENT	1.43	3.91	0.03	3.52	9.33	9.74
36	188. MISC PLASTIC PROD.	6.82	7.29	9.79	13.61	8.19	8.85
37	389. AUTOMOBILE REPAIR & SERV	3.57	3.94	6.96	10.69	7.02	7.02
38	353. PHOTOGRAPHIC EQUIP & SUPPLIES	5.67	5.90	4.34	7.98	7.92	8.83
39	50. OTHER ORDNANCE & ACCESS.	5.50	8.57	5.79	9.47	7.78	8.69
40	225. PRIMARY ALUMINUM	6.20	6.89	8.60	12.30	10.85	11.79
41	229. ALUMINUM ROLLING & DRAWING	6.53	7.20	7.84	11.58	10.47	11.41
42	301. ELECTRIC MEASURING INSTR	8.22	8.67	9.05	12.81	5.66	6.23
43	273. SPECIAL DIES, TOOLS, ACCESS.	5.96	6.65	6.44	10.13	9.48	10.19
44	377. BANKING	4.06	4.38	8.07	11.84	8.12	8.43
45	379. INSURANCE CARRIERS & AGENTS	3.38	3.76	6.84	10.56	8.02	8.33
46	3. LIVESTOCK	2.79	3.11	1.92	5.47	6.99	7.73
47	17. COAL MINING	4.89	5.38	9.88	13.71	12.33	13.10
48	398. US POSTAL SERVICE	3.83	4.27	7.90	11.66	12.93	13.11
49	321. TELEPHONE & TELEGRAPH EQUIP	10.36	10.85	9.63	13.44	10.33	10.92
50	247. SCREW MACH PROD & FASTENERS	4.99	5.81	6.45	10.13	8.82	9.74

TABLE 5

PROJECTIONS OF DEFENSE INFLATION

	1982	1983	1984	1985	1986
Defense Deflator	9.1	9.1	9.6	9.8	9.5
Structures	9.5	10.1	10.2	9.9	9.8
Services	10.4	9.6	9.7	9.7	9.5
Durables	9.0	9.1	9.3	8.9	8.6
Non-durables	5.8	8.0	10.2	12.4	11.9

Source: Data Resources, Inc.

TABLE 6

FRB INDICES OF CAPACITY UTILIZATION (%)

	1982	1983	1984	1985	1986
All Manufacturing					
High	82.3	85.1	86.7	89.0	90.7
Low	81.2	92.7	84.3	85.4	86.2
Materials Industries					
High	84.9	88.7	90.1	91.0	92.5
Low	83.9	86.3	87.3	87.7	88.3
Primary Processing Industries					
High	82.3	85.2	86.5	88.4	90.2
Low	81.6	83.5	84.8	86.0	87.2
Advanced Processing Industries					
High	81.9	84.9	86.9	89.4	91.2
Low	80.7	82.2	84.0	85.1	85.8

Source: Data Resources, Inc.

TABLE 7

DEFENSE ECONOMIC IMPACT MODELING SYSTEM
IMPACTS OF HIGHER DEFENSE SPENDING ON THE TOP FIFTY
SUPPLYING INDUSTRIES
MEASURES OF INDUSTRY CAPACITY

RANK		INDUSTRY	GROWTH RATE DIFFERENTIAL 73-81 V 82-86	1986 OUTPUT RELATIVE TO PREVIOUS MAXIMUM	NON-DEFENSE OUTPUT 82-86 HIGH	LOW
1	322.	RADIO & TV COMMUNICATION EQUIP	6.11	1.25	32.67	32.56
2	335.	AIRCRAFT	3.89	1.36	60.68	58.80
3	336.	AIRCRAFT ENGINES & ENGINE PARTS	2.09	1.47	16.16	15.81
4	337.	AIRCRAFT PARTS & EQUIP. NEC	2.43	1.45	20.26	19.94
5	385.	MISC BUSINESS SERV	0.92	1.30	316.28	314.06
6	45.	COMPLETE GUIDED MISSILES	7.75	1.48	7.06	7.04
7	375.	WHOLESALE TRADE	2.57	1.21	678.83	672.74
8	324.	SEMICONDUCTORS	-0.54	1.64	48.60	48.62
9	181.	PET. REFINING & RELATED PROD	1.58	0.98	145.26	144.06
10	338.	SHIPBUILDING & REPAIRING	0.96	1.21	8.90	8.94
11	18.	CRUDE PET & NAT GAS	0.63	1.07	79.09	78.15
12	381.	REAL ESTATE	1.53	1.19	708.31	706.74
13	365.	MOTOR FREIGHT	4.29	1.21	184.18	182.48
14	372.	ELECTRIC UTILITIES	0.48	1.23	248.16	246.36
15	325.	ELECTRONIC COMPONENTS. NEC	8.43	1.42	33.98	33.70
16	370.	COMMUNICATIONS: EX RADIO & TV	0.57	1.45	360.13	356.54
17	213.	BLAST FURNACES & STEEL MILLS	7.52	1.02	125.02	122.75
18	46.	AMMUNITION. EX SMALL ARMS. NEC	10.05	1.28	0.42	0.40
19	388.	EATING & DRINKING PLACES	2.04	1.14	292.75	291.05
20	387.	MISC PROFESSIONAL SERV	0.93	1.25	222.84	221.41
21	44.	MAINTENANCE & REPAIR. OTHER	1.61	1.16	158.25	158.47
22	161.	INORGANIC & ORGANIC CHEM	4.40	1.23	118.41	117.38
23	366.	WATER TRANS & RELATED SERV	4.33	1.24	54.67	54.34
24	291.	ELECTRONIC COMPUTING EQUIP	-1.48	1.67	127.34	126.83
25	40.	NEW MILITARY FAC.	21.66	0.99	0.00	0.00
26	367.	AIR CARRIERS & RELATED SERV	2.59	1.11	97.18	96.41
27	290.	MISC MACHINERY	2.04	1.31	36.18	35.60
28	382.	HOTELS & LODGING PLACES	3.00	1.24	51.32	51.19
29	333.	MOTOR VEHICLES	7.25	1.00	257.41	251.00
30	363.	RAILROADS & RAIL-RELATED SERV	4.46	1.28	96.07	94.98
31	386.	ADVERTISING	-0.11	1.23	184.37	182.98
32	345.	ENGINEERING & SCIENTIFIC INSTR	0.42	1.33	7.51	7.41
33	334.	MOTOR VEHICLE PARTS & ACCESS.	4.21	1.25	150.36	146.92
34	373.	GAS UTILITIES	1.27	0.86	85.95	85.52
35	47.	TANKS & TANK COMPONENT	-9.66	1.23	1.49	1.48
36	188.	MISC PLASTIC PROD.	4.59	1.39	95.51	94.37
37	389.	AUTOMOBILE REPAIR & SERV	1.46	1.18	175.60	174.26
38	353.	PHOTOGRAPHIC EQUIP & SUPPLIES	0.54	1.30	52.01	51.83
39	50.	OTHER ORDNANCE & ACCESS.	9.03	1.40	0.76	0.75
40	225.	PRIMARY ALUMINUM	4.11	1.40	22.92	22.68
41	229.	ALUMINUM ROLLING & DRAWING	5.59	1.40	28.47	28.14
42	301.	ELECTRIC MEASURING INSTR	3.71	1.40	13.52	13.50
43	273.	SPECIAL DIES. TOOLS. ACCESS.	6.40	1.29	26.62	26.17
44	377.	BANKING	1.02	1.21	184.39	183.06
45	379.	INSURANCE CARRIERS & AGENTS	0.45	1.18	282.89	280.45
46	3.	LIVESTOCK	1.89	1.13	183.35	181.52
47	17.	COAL MINING	1.43	1.30	39.70	39.29
48	398.	US POSTAL SERVICE	3.88	1.22	46.77	46.41
49	321.	TELEPHONE & TELEGRAPH EQUIP	6.93	1.58	38.98	38.56
50	247.	SCREW MACH PROD & FASTENERS	6.90	1.21	18.43	18.12

Representative HAMILTON. I think we'll proceed with your testimony, Mr. Gansler, and then address questions to both of you.

Proceed, sir, as you wish.

STATEMENT OF JACQUES S. GANSLER, VICE PRESIDENT, THE ANALYTICAL SCIENCES CORP., ARLINGTON, VA., AND FORMER DEPUTY ASSISTANT SECRETARY OF DEFENSE FOR MATERIAL ACQUISITIONS

Mr. GANSLER. Clearly, over the next few years, one of the most critical questions facing Congress, the administration, and the American people is whether or not the projected significant increases in defense expenditures will get us the needed military goods or will, in fact, simply result in an increase in the cost of military goods.

Most of the macroeconomists that have been appearing here—including those of the administration and those that have been writing—say that "Assuming no bottlenecks," we will be getting the necessary military goods in a cost-effective fashion.

Unfortunately, the data over the last few years—during which defense procurement dollars have been rising—would clearly indicate just the opposite. They indicate we have been spending an increasing number of dollars for the procurement of defense goods and we have been getting less and less defense goods—less ships, less planes, less tanks, less bullets.

Therefore, I would have to conclude that, because of the fact that defense has a higher rate of inflation clearly shown from the data for defense goods—compared to the rest of the economy—that the assumption being made, mainly that there are no bottlenecks, is falacious. This is partly attributable to the fact that there are significant bottlenecks already in the defense industry and, second, to the unique way in which defense does its business, which, in effect, prohibits the removal of these bottlenecks, or at least makes them extremely difficult to remove.

Thus, if that's the case, simply throwing money at the defense industry will not be sufficient. Rather, the structural rigidities that exist within the industry, particularly down at the lower levels, will have to be changed in order to correct the problem.

As I see it, there are three actions which must be taken:

First, changes will have to be made in the DOD's acquisition practices.

Second, the bottlenecks will have to be addressed directly.

And third, there must be structural changes in many sectors of the defense industry.

Let me briefly highlight some of the current bottlenecks and the ones that I believe will get worse, with the increasing dollars, unless correct actions are taken.

First, let me address the lower tiers of the defense industry—the subcontractors and parts suppliers. That is a sector that you normally don't think of. When you refer to the defense industry, you normally think of the large aerospace contractors—the big prime contractors.

The data clearly show that at the lower tiers level the trends are toward fewer and fewer suppliers for the defense industry. This is not due to not enough business since business is actually going up. What seems to be happening is that barriers to entry exist for these firms. Thus, even with the market increases, the firms are not flowing into the defense industry.

Rather, the prime contractors continue to go back to the same suppliers that they have been using, and are simply placing more orders with these same people. As a result, the prices and the queue—the leadtime—just go up significantly. This is a phenomenon that we've been seeing over the last few years and which is projected to continue if we keep using the same suppliers, who are already operating on a three-shift basis and therefore can't increase their outputs.

Now, because of the increased leadtimes and the increasing demand for parts at the bottleneck areas—particularly down at the lower levels—the overall weapons systems—at the prime contractors level—are similarly going up in costs and leadtimes correspondingly.

The data also show that there is a very high correlation between leadtime increases and cost increases at the lower tiers and those which are seen in the prime weapons systems.

Labor constitutes the second major bottleneck. Again, in view of the fact that we have a very large amount of unemployment in the country this may be surprising. However, there are significant shortages already evident in many defense-related labor categories, such as engineering and skilled labor. In the engineering categories, in some places, aerospace and computer engineers, particularly with advanced degrees and in the skilled labor there is a lack of machinists, tool and die makers, and so forth.

These shortages are expected to get much worse as the aging defense work force phases out. And money, again, will not create these people. Rather, long-term training is required in this area.

The Government has no policy designed specifically to attack these targeted labor areas.

Production equipment, both at the prime and at the lower tiers, is the third principal bottleneck. The majority of the equipment in the defense industry today is over 20 years old. Not only is the equipment old, but also it is inefficient. And there are very few incentives, if any, to replace that equipment for the defense workers.

In most factories, there are a few modern, efficient, and very expensive production units. And these are in use three shifts—for example, large forges, the big multiaccess machines, the American control and airplane assemblies.

Therefore, since they are already in use on three shifts, there is no room for expanded production.

To solve some of the problems of the bottlenecks in the parts and machinery, many of the defense prime contractors have been going offshore to buy critical forgings and other parts. This simply raises the dependency question and does not address the cost issue, but rather it addresses the lead problem. If you can't get them, you go offshore, simply to get them, regardless of the cost.

The materials area is the last of the bottlenecks. Here it's well known that much of this material is coming from importing exotic and very high purity materials. The few limited raw material suppliers and the processors of selected defense-related materials have been again fully loaded and, therefore, when we increase the demand, they simply increase the leadtime and the prices go up.

Well, that's not a very cheery picture of the factors of production, but in terms of these critical bottleneck areas that seems to be the situation today. Only recently, however, have the problems in the overall defense industry been recognized. There have been a series of studies, one by the House Armed Services Committee under Chairman Ichord, the special panel on the defense industry; the Defense Science Board report that came out on the defense industry; the Air Force Systems Command report; and my own book. All of these are referenced in my testimony.

The interesting thing about these four reports is that they came from a wide diversity of views—from the Congress, from the industry, from the military and from independent research—and they all concluded that there are very serious problems in the defense industry, and that the United States is paying over $50 billion a year for military equipment and not getting its money's worth.

In addition to the economic problems, they concluded that there are very serious strategic responsiveness problems. In other words, the ability to rapidly surge, even after mobilization, does not exist today. And again, this is due to the bottlenecks.

For example, if we wanted to rapidly surge the output of existing aircraft plants and we were not physically constrained, it would still take us over 3 years to significantly increase the output of those lines.

Now, correcting these problems will not be easy nor will it happen rapidly. Yet, I believe, there is a growing recognition of the need to make these changes.

Again, the three required areas are: First, to make significant changes in the way the Defense Department does its business; second, to attack simultaneously the above-noted bottlenecks; and third, to make an attempt to overcome the structural rigidities in the defense industry sectors.

If these are implemented, then I believe we can have a significant output in our defense goods. On the other hand, without them, our defense posture will not be significantly strengthened and may, in fact, be reduced.

I listed in my testimony 10 specific corrective actions that I feel should be taken by the executive and legislative branches. I will not go into them in detail, but let me simply summarize them with a sentence or two.

The first and perhaps most critical is introducing stability into the defense planning and budgeting process. The United States, as you know, is the only nation in the world that doesn't have a multiyear defense procurement budget. This is just where the problem begins. From that point on, the instability of having a different budget every 6 months in addition to the sort of phenomenon that you just alluded to in your comments, Mr. Chairman, are at the very least, very clearly causing economic inefficiencies in the defense industry.

Second, it is critical to utilize realistic initial program budgets. It almost sounds foolish to make such a statement, yet the opposite is known to be the case. Beginning with industry, going through the industry, and on through Congress, we tend to use, unrealistic budget estimates initially, and from that point on the programs are in trouble. Part of that is, as was noted earlier, that the inflation indices used are not realistic.

Third, I believe steps should be taken to introduce real competition into the defense procurements. By that I do not mean the one-time auction for an award at the beginning of a program—in the R. & D. phase. I mean dual sourcing. Two contractors going through the full program like the real world—the commercial world—actually operates. This is the only way to significantly reduce the cost of defense equipment and to also minimize the increasing costs of defense equipment.

Fourth, the DOD must begin to address directly the problems of the lower tiers of the defense industry. By that I'm not talking about four-digit S.I.C. type information, such as was just given. In fact, frequently we've looked at, for example, the forging industry at that level and find that there's only 50-percent capacity utilization. Therefore, they claim to have ample surge capability. Yet, when you actually look at a specific weapons system you find two suppliers of a particular part, for example, titanium forge, already operating three shifts and, the results are very significant bottlenecks in that industry.

In order to see these bottlenecks at the lower tiers, so you have to get all the way down to the specific details of the type of equipment being procured by the Defense Department. And I believe this is where the problem should be directly addressed. For example, by creating another supplier, if necessary, to create real competition at that level.

Fifth, the Government must create incentives for contractors to make productivity-enhancing capital investments. That's a problem across the overall United States economy but it's even more critical in the defense industry today.

Sixth, the Government must develop and implement targeting labor policies. I talked about the labor problems that exist today, and the fact that nothing is being done about them.

Seventh, I believe we should attempt to integrate far more fully civilian and defense plants. Today we actually have incentives discouraging that. Yet, most other countries, Russia included, try to integrate civilian and defense plants and thereby provide surge capability and have the ability to absorb cutbacks when those are required.

Eighth, the DOD must improve its R. & D. planning. And here I would particularly like to stress the use of new technology in achieving cost reductions as well as performance improvements. The DOD tends to use new technology almost exclusively for performance improvements while the civilian economy tends to use new technology for both cost reductions and performance improvements. I believe this approach will get us the needed quantities of military equipments, not just one very good ship, and one good plane, and one good tank.

Ninth, the Government must establish clear and rationale international policies in the defense procurement area. Today these do not exist, particularly in terms of the transfer of technology mechanisms currently taking places; however, this should not be done with trade barriers. Other more sophisticated approaches should be used. For example, the use of R. & D. on next-generation technology, so we can become a net exporter rather than have to be dependent.

And last, the Government should institutionalize an approach to improve the defense industry's economic efficiency and strategic responsiveness. Again, I think the United States is the only nation in the world that does not recognize its defense industry as a national resource and treat it accordingly.

We have allowed what we believe to be a "market" to operate, and yet it's a very unique market—in most cases with one buyer and one supplier. A market of this sort doesn't naturally operate efficiently or effectively; therefore, it is up to the Government to create a more viable market. For example, in some sectors, we have far too many plants being maintained by the Government and we, therefore, have inefficiency from the excess capacity that we maintain.

So a structural perspective is required from the Government. They need a set of sectoral development plans for the defense industry. This is a true "supply side" perspective; in terms of the new terminology.

In summary, I'd like to acknowledge that the new administration has begun to address some of these needed actions. Secretary Carlucci has at least partially addressed at least 5 of the 10 items that I've listed above, and I believe the administration is sincere, they are not simply giving speeches on the subject, but are constantly attempting to implement these changes. Congress should enthusiastically support these initiatives and encourage the DOD. It would be an extremely difficult cultural change.

If, however, these changes can be made, we will have a stronger defense posture for the increased dollars being spent, giving renewed meaning to the phrase "arsenal of democracy." Without such changes, we will continue to spend more and get less—an undesirable effect for both our national economy and our defense posture.

The American people need, deserve and will demand a better use of their defense dollars.

Thank you.

Representative HAMILTON. Thank you, Mr. Gansler.

[The prepared statement of Mr. Gansler follows:]

PREPARED STATEMENT OF JACQUES S. GANSLER[*]

Over the next few years the new administration will ask Congress to approve the expenditure of hundreds of billions of dollars more for needed defense procurements. Most macroeconomic analysts -- including those of the administration -- have been saying that, "assuming no bottlenecks", there would not be significant inflationary effects from these increased defense expenditures; and that, as the dollars are increased, we would get -- in a cost-effective manner -- the needed military goods.

Unfortunately, the recent historical data would indicate just the opposite; namely, we have been spending more and more money on defense procurement in each of the last few years, and we have gotten fewer and fewer defense systems -- ships, planes, and tanks -- each year. The data clearly show that the unit cost of defense equipment has been growing much more rapidly than general inflation indices, and that procurement lead times have been increasing significantly.

Not withstanding the assumption of the macro-forecasters, this result is partly attributable to the presence of bottlenecks in the defense industrial base. Compounding the problem is the unique nature of the defense market, i.e., the way the Department of Defense (DOD) does its business, which makes the removal of these bottlenecks difficult. Simply throwing money at the defense industry will not be sufficient. Structural rigidities prevent the expansions required in order to remove the bottlenecks. Thus, to correct the problem, it will be necessary to take three actions: First, make changes in the DOD's acquisition practices; second, address the bottlenecks directly; and third, achieve structural change in many sectors of the defense industry.

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To understand why the cost of defense goods is rising more rapidly than the general inflation indices, let me briefly summarize the causes of the bottlenecks, and their impacts. Following that, I will then outline some desirable corrective actions.

Lower Tiers (Subcontractors and Parts Suppliers)

When thinking about "the defense industry" we normally think in terms of the large, prime contractors -- the giants of the defense industry -- and frequently observe considerable excess capacity available. This, combined with the known, high levels of national unemployment, leads many people to believe the defense industry can absorb the increased demand from rising defense budgets. However, it is at the lower tiers -- which have been allowed to deteriorate (particularly in the post-Vietnam era) -- that we find the first of the significant bottlenecks in the defense industrial base.

At these lower tiers, the data clearly show the trends toward fewer and fewer defense suppliers. Some of the explanations given for defense business being far less attractive than comparable civilian business for these lower tier suppliers are: low profit, small volume, one-year orders, cyclical demand, special military requirements, market uncertainty, excessive regulations and paperwork. Recent studies of major weapon systems have shown that significant supply problems exist in the castings, forgings, electrical connectors, semiconductors, and precision bearings that go into almost all weapons systems. In items such as these, it was found that there are far fewer sources interested in defense business, and that defense is seeing rapidly rising prices and extremely long lead times on deliveries from the few remaining, highly-specialized, defense suppliers -- many of whom are the sole sources for these critical items. Essentially, as defense budgets are increased and the quantities of complete weapons systems requested go up, the market of lower tier suppliers does not expand. This phenomenon is caused by the high "barriers to entry" that exist for new firms who might otherwise be drawn into the defense market. Besides the many undesirable characteristics of doing business at the lower tiers of the defense industry -- some of which are noted above -- there are the unique acquisition practices of the DOD which discourage dual-sourcing of lower-tier suppliers, e.g., a lack of price sensitivity (once a prime contractor has been selected); a preference for minimizing "front-end" costs; and the requirement for only using "qualified" equipment. Thus, the easiest (and often only) option the prime contractors have is to go to the same suppliers that they have used for the small quantities previously bought. These suppliers simply add the increased orders to their already existing queues, and correspondingly raise their prices. (Both of these trends have been extensively documented over the last year.) The production process itself does not correspond to the two or three years of lead time that it now takes to get some of these critical parts. Rather, the full, multi-shift utilization of the current suppliers, and the failure of the supplier market to expand, causes both the rising costs and increasing lead time at the lower tiers. This, in turn, causes corresponding increases in costs and lead-times in the vast majority of complete weapon systems. (Again, this has been amply documented over the past year.)

Labor

The second significant area of bottlenecks is labor. Despite high nation-wide unemployment, significant shortages are evident in many defense-related engineering and skilled labor categories, e.g., aerospace and computer engineers (especially with advanced degrees), machinists and tool and die makers. These shortages are expected to worsen significantly as the aging defense production work force retires, and as many of the currently practicing engineers and skilled workers become obsolete -- relative to today's technology. Money alone won't create these people -- only long-term training will. These are not the workers who are unemployed today, and the U.S. has no program to address this critical problem. Additionally, natural market forces are not likely to bring new workers into these areas due to the high skill demands and the historical instability of the market. (They believe that by the time they are finally trained they won't be needed.) Thus, what has been happening is that the existing skilled workers and engineers are simply being bid on, by each firm as it gets a new defense contract; and the price of the limited number of workers has been rising rapidly (as has the "overhead" costs for recruiting) -- causing a significant increase in the cost of defense goods, without any increased output. (In fact, with reduced output -- due to the inefficiency associated with the high rate of labor turnover as the workers move from plant to plant, based on the highest current bid.)

Production Equipment

As with labor and parts, there are significant bottlenecks in the area of production equipment for defense. Most of the available equipment is over 20 years old, and is inefficient.

In spite of the large amount of empty floor space and, often unused, old production equipment, the few, modern, efficient production units that exist -- such as the large forges and the big, multi-axis, numerically-controlled airframe assembly machines -- are already in use of three shifts; leaving no capacity for expanded production.

Machines such as these are expensive, and there have been almost no incentives for the defense contractors to invest in either more of these or in modernizing the rest of their production facilities. Thus, it is not surprising that there has been relatively little capital equipment bought in the defense industry in recent years. (The investment rate in the aerospace industry has been between one-half and one-fourth less than that of the overall U.S. manufacturing sector -- and the overall U.S. figure has certainly been very low compared to most other industrialized nations.) Additionally, it is not surprising that these capital equipment bottlenecks exist both at the prime contractor and the lower tiers. While more labor-intensive alternatives sometimes exist, they are clearly much more expensive; and, for some equipment, e.g., the large forges, there are effectively no existing alternatives -- other than to simply increase the waiting time for use of the equipment; and drive the prices up still higher.

One choice, which many defense suppliers have begun to use in solving these supply problems, is to go offshore for their parts. This naturally raises the dependency issue -- an historically critical one for defense procurements -- but the trends have clearly been in this direction, i.e., a growing list of foreign suppliers of critical defense-related parts and subsystems -- in many cases, as sole-source suppliers. (Examples range from precision glass through specialty forgings.) In almost all cases, the U.S. firm is buying its defense-related equipment offshore because it simply can not obtain them -- in a reasonable time period -- in the U.S. Thus, price is not the criterion; and often the result is a further increase in the cost of the weapon system being procured.

Materials

Here, too, defense is faced with some unique bottlenecks -- because of the heavy demand for exotic and very high purity materials. Much of this is imported, and thus there is not only the dependency issue, but also the rapidly rising prices of recent years (brought on by the increased control over prices by the cartels of newly-independent countries of the "Third World" -- following the example of OPEC). The U.S. has not updated its strategic materials stockpiles in 20 years, nor has it used these as "economic stockpiles" (to leverage for lower prices). Thus, the few limited raw material suppliers and processors of selected defense-related material have recently been fully loaded -- and therefore have been increasing their prices and lead times at their will, e.g., on molybdenum and titanium. Again, with supply limitations, all that the defense weapon system contractors can do is to pass on these price increases to the DOD. Here, as with the other bottleneck areas, the corrective actions lie mostly with the ultimate (monopsony) buyer -- the U.S. government.

Only very recently as the seriousness of these overall defense industry problems been widely recognized and accepted. Specifically, four reports on the subject -- from a wide diversity of backgrounds -- appeared at the end of 1980, namely:

- House Armed Services Committee, Industrial Base Panel Report, "The Ailing Defense

Industrial Base: Unready for Crisis," December 31, 1980. (Chairman, The Honorable Richard Ichord.)

- Defense Science Board Task Force Report on Industrial Responsiveness, November 21, 1980. (Chairman, Robert Fuhrman.)

- The Air Force Systems Command statement on defense industrial base issues, November 13, 1980. (General Alton Slay.)

- The Defense Industry, J. S. Gansler, MIT Press, October 1980.

These four reports all concluded that there are serious problems within the defense industry; the results of which are that the U.S. is paying over $50 billion a year for military equipment and not getting its moneys worth. Nor can the industry supplying this equipment expand rapidly enough to make a difference in the outcome of any likely-duration conflict. (Even with unconstrained expenditures, it would take over three years to increase production significantly from existing aircraft production lines -- due to the bottlenecks noted above.)

Correcting these problems will not be easy, nor will it happen rapidly. Yet there is growing recognition of the need and urgency to make changes in the "way the Defense Department does its business". If such changes can be made; and if there simultaneously is a direct attack on the above-noted bottlenecks and an attempt made to overcome the other structural rigidities in the various defense industry sectors, then it should be possible to increase defense expenditures without excessive inflationary pressures. Additionally, and equally critical to our national security posture, it should be possible to both lower the cost of defense equipment and achieve far greater cost control over defense procurements -- thereby allowing the acquisition of the much-needed increased quantities of weapon systems within the defense budget the Congress is likely to approve over the coming years.

Corrective Actions

Toward these objectives, there are ten specific actions that should be taken by the Executive and Legislative branches in order to improve the situation significantly.

1. Introduce stability into the defense planning and budgeting process. The United States is the only nation in the modern world that does not have a multi-year defense budget approved by its legislative branch. Thus, the problem of achieving stability begins with the Congress. However, although there are Constitutional and political factors which discouraged across-the-board multi-year authorizations or appropriations, there are actions -- perhaps more readily attainable -- which can go a long way toward creating greater stability within the defense acquisition process. These include multi-year procurements and adhering to planned quantities and production rates (without either the "stretch-outs" introduced by the DOD in the budget process, or the revisions introduced by the Congress). Such improved stability will directly affect the ability of the industry to maintain a relatively stable work-force, expand its supplier base, and plan its capital investments -- all critically necessary; but impossible under the current conditions of frequent budget and program changes.

2. Utilize realistic initial program budgets. Both the Executive and Legislative branches have been guilty of allowing -- and even encouraging -- initial "buy-ins" on programs. That is, permitting unrealistically low initial estimates for programs so that they can get through the approval process: even though everyone -- from the industry to the DOD and Congress -- is aware that the numbers are overly optimistic. Frequently, realistic cost estimates -- conducted by independent sources, or based on previous experiences -- are ignored. The problem is compounded by applying unrealistically low inflation indices to the program. As a result, when costs begin to grow, other programs are cut back, or the specific program is stretched out; causing further cost increases across the board and creating further cutbacks, and on and on. The solution would be to use realistic numbers in the first place; but that is extremely difficult because many other programs either could not be initiated or would have to be terminated (both difficult actions). Naturally, everyone would agree that we need to use realistic cost estimates. The question is: How to break the present vicious circle and begin to accomplish this? The next recommendation would help address this point.

3. Steps should be taken to introduce real competition into defense procurements. This does not mean more of the sort of "one-time" competition presently used. It means dual sourcing throughout the program. Perhaps the single most important difference between defense business and civilian business stems from the all-too-frequent absence of alternatives in the military procurement process.

   In defense, there customarily is a fierce "rivalry" during the initial competition for the award of a research and development contract. After this initial competition -- frequently awarded based upon a firm's "buy-in" -- the winner becomes the sole developer and producer for that military system over the next 20 years. Thus, a program -- such as a missile system -- may once have had an initial competition, but after that first step there is no alternative source for this much-needed piece of equipment. Therefore, the sole-source producer has no incentive to reduce his subsequent prices, in fact, if he increases the price, the government has little choice but to attempt to "negotiate," and basically to accept the cost increases.

By contrast, in the civilian sector the buyer would usually refuse to accept such increases, and would go to alternative producers. Occasionally, a similar approach has been tried in defense procurements. Almost always this yielded very significant savings to the government. (Studies by TASC have found typical cost savings of 30% upon introduction of production dual-sourcing.) Of course, the initial producer always argues that by building more units himself he will move down the "learning curve" and therefore it would not be worth the government's money to pay for the initial start-up costs of a second source. In theory this is true; but in practice prices have almost always been found to rise in defense procurements, as a result of the sole-source conditions of the producer. Therefore, I favor far more dual-sourcing of defense production; wherein the annual buys are split between the two producers as a function of the quality and cost of their equipment in the prior years. This would be using natural market forces -- rather than regulations -- to drive down defense equipment prices.

4. The DOD must begin to address directly the problems at the lower tiers of the defense industry, both in terms of their own policies, and the way subcontractors are treated by the prime contractors. Most of the lead time, single-source and similar problems which limit defense capacity are at the lower tiers. This -- a key finding of the Defense Science Board -- was confirmed by several recent TASC studies of lead times and industrial responsiveness. Interestingly, it does not show up in the macroeconomic modeling being done, because of the specialized nature of defense equipment. Thus, far greater disaggregation is required to both determine the bottlenecks and identify the necessary corrective actions. For example, a typical four-digit S.I.C. code analysis for the forging industry recently showed a 50% capacity utilization -- while it was simultaneously found that there were significant bottlenecks (with the two or three suppliers offering two to three-year waiting times, based on three-shift, maximum utilization) for the large titanium and aluminum forgings required on a significant number of military systems.

Besides the obvious need for improved visibility into the lower tiers, some specific actions which should help are: increased efforts to establish multiple sources for critical, lower-tier items. More research and development funding channeled to these tiers. More "combined buying" (to increase the volume of the buys). Paperwork requirements on smaller firms reduced significantly. (Smaller firms simply do not have the high-priced law firms, accounting and administrative staffs to comply with detailed DOD requirements. The lack of such overhead is one of the principal reasons they are more efficient, and DOD should take advantage of this efficiency.) With regard to the treatment of the lower tiers by the prime contractors, there must be more "flowdown" of the beneficial contract provisions given to the prime contractors -- progress payments, special inflation clauses, etc. Finally, and most important, there must be greater business stability, and a reasonable profit (consistent with the risks) provided to these lower-tier defense suppliers.

5. The government must create incentives for contractors to make capital investments. To improve productivity in defense -- as well as in the rest of the nation's economy -- changes in taxes, cost accounting standards (such as allowance for interest payments), procurement and profit policy, and other areas of legislation are required in order to encourage industry to make the capital investments needed to achieve lower equipment costs. However, to be truly effective these incentives must be applied only to productivity-enhancing capital investments, e.g., modern equipment and R&D, rather than allowed for such "non-productive" investments as acquisitions, mergers, land, and diversifications. Similarly, the incentives must be "targeted" into the needed, critical-bottleneck areas -- rather than the normal U.S. approach of across-the-board incentives. (Countries such as Germany and Japan have had far more success with such differential policy tools.) While the government should avoid ownership of this new capital equipment, there may be some cases in which risk sharing, e.g., through indemnification, would be desirable. In any case, these investments become self-defeating actions unless efficient production rates are used in the modernized plants.

6. The government must develop and implement specific labor policies. Again, these must be "tailored" to critical bottleneck areas. The policy objectives here must be aimed at achieving long-term labor stability (for greater productivity); and at retraining, wherever structural and technical adjustments place new demands on the labor force. These

policies must be developed through joint efforts with industry and labor, yet aimed to satisfy specific national needs. Specific areas currently identified as needing targeted programs include: skilled blue-collar (machinists and tool and die makers); technicians (computers and electronics); and engineers (especially selected advanced degree and continuing education candidates in the areas of computers, semiconductors, and aerospace). One step which would greatly aid in this attack on defense's labor problems -- both in terms of stability and bottlenecks -- is the next action.

7. Integrate civilian and defense plants. Currently, this is discouraged by the way the DOD does its business. However, far greater integration -- at the plant level -- between military and civilian production of equipment should result in higher volume in those plants and thus greater overhead absorption and lower costs; while at the same time resulting in greater production surge capability -- through the ability to shift civilian workers, production equipment and parts into the military area, when a surge is required. The same works in reverse if cutbacks are required on individual defense programs -- you don't have to close the plant if a program is cancelled.

8. DOD must improve R&D planning to allow for greater quantities of equipment and better use of advanced technology. Dollars should be shifted in the direction of "new idea generation", rather than simply paying for long, large, and expensive full-scale development programs. Often, modifications of existing systems is cheaper and faster -- with much less risk, yet comparable mission performance. Similarly, more R&D dollars must be shifted to the lower tiers of the defense industry and to the small firms (where historically many of

the very creative new ideas have originated; and where the majority of new jobs have been generated in recent years. Finally, there must be far greater emphasis on design-to-cost; wherein the performance of systems is traded off against the unit cost of those systems, and engineers are trained to design equipment to an affordable unit production cost. This will allow new technology to be used in cost reduction (as well as performance improvement) -- as is done in the civilian world. (Currently, in the defense community it is assumed that increased performance of weapon systems must always cost more money -- instead of the lower cost and higher performance choice that new technology offers.) Use of this approach will allow the U.S. to acquire the needed quantities of modern military equipment. Otherwise, the U.S. will be driven into a position of having only a very few, very high performance systems -- which would be insufficient quantities to win a war.

9. The government must establish clear and rational international policies in the defense procurement area. These range from policies on foreign military sales through the growing dependency on the importing of raw materials, critical parts and subsystems, to technology transfer, interoperability of logistics systems with our allies, and many other complex interdependency issues. My personal preference would be not to establish trade barriers; but rather to take advantage of America's areas of strength. For example, in areas in which we are currently dependent for critical parts on a foreign supplier, initiate a next-generation research and development program in that area -- so that we could become the exporters for the next generation of those parts.

In any case, this whole international area is currently going unchecked, and the long-range problems are terribly significant.

10. Finally, the government should institutionalize an approach to improving the defense industry's economic efficiency and strategic responsiveness. To date, it has been assumed that "the market" will achieve desirable characteristics for the defense industry. However, due to the unique characteristics of this market, i.e., one buyer and usually one, or very few, suppliers, this has not been the case. Under the condition of a monopsony and oligopoly market, the government must determine the influence of its actions on the structure, conduct, and performance of the industry. For example, in the 1950s the United States bought over 3,000 fighter planes per year. In the 1960s this went down to 1,000 planes per year, and in the 1970s down to 300 planes per year. Yet the structure of the aircraft industry remained largely the same, with essentially the same number of plants. This has aggravated the cost problems described above, because it has been necessary to reduce quantities and "slip" schedules in order to keep each aircraft producer alive, even at a low level. Yet, the existence of these empty, or underutilized, plants does not assure either efficiency or responsiveness -- due to bottlenecks in other areas. Thus, in this case, the government should allow the competitive market to operate, and allow a reduction in the number of plants.

By contrast, however, in the tracked-vehicle industry there has been only one producer of tanks, and one producer of armored personnel carriers for many years. Therefore, it may be in the government's interest to create a viable competitive market by requiring a second source in each case. As would be expected, corrective actions are different for different sectors, since building ships is not the same as manufacturing bullets, or building radars. Thus, sector by sector analyses are required, and actions must be taken to maximize the efficiency and responsiveness of each individual sector of the defense industry. These actions must consider both the peacetime efficiency and the wartime surge capability of the individual sector. Some of them may result in a common improvement in both efficiency and responsiveness. For example, the ordering of long-lead parts a few years in advance would raise the volume at the parts industry level and thus lower their price, while simultaneously improving the overall responsiveness of the defense industry. Clearly, such analyses and actions to improve industrial efficiency and responsiveness will require some initial resources, but the long-range payoff in terms of lower-cost production of military equipment in peacetime, as well as crisis response from the defense industry, will more than warrant the small investment.

Of all ten recommendations, this last one -- the institutionalizing of a set of sectoral development plans for the defense industry -- is perhaps the most controversial; yet undoubtedly it is the one with the greatest long-term, potential payoff. In my opinion, a principle cause of our overall declining national productivity and the continued high inflation rates is the uncertainty accompanying our current uncoordinated government policies in the industrial area (in contrast to the national industrial development plans in Germany, Japan and elsewhere). The absence of such indicative sectoral plans for the defense industry is particularly critical -- because of the unique market structure and annual fluctuations in demand. By contrast, the existence of such long-term development plans for sectors of the defense industry would provide the desired stability required to encourage capital investment, efficient use of labor, development of multiple suppliers, etc. Such a "supply-side" perspective (to use the current vogue) would be a natural one to be applied to the defense industry first, since it is already totally controlled by the government -- as the sole buyer, regulator, banker, user, etc. -- yet these actions are currently uncoordinated. Thus, the defense industry could provide an excellent "demonstration case" for the application of selective national industrial development policies in the U.S. Naturally, the institutionalization of such a program would have to be done slowly, with a full democratic system of checks and balances, and based on "consensus management" among business, labor and the government. (Again, in a fashion similar to that of Germany and Japan -- but with a unique U.S. flavor.) A government organization with a structural perspective -- for example, of not too many firms (plants) in some defense industrial sectors, and not too few in others -- needs to be established; and market forces should be created to allow, and encourage, structural adjustments in the necessary directions -- toward improved industrial productivity, i.e., more military equipment for the authorized defense budget.

Summary

In conclusion, I would like to acknowledge that the new administration has begun to address some of these ten needed actions. In fact, in his recent initiatives Secretary Carlucci explicitly addresses -- at least partially -- five of the above items. (Specifically, items #1, #2, #3, #5, and #8.) I believe the DOD is very conscious of the need for these changes and is serious about implementing them. They appear to be taking steps to follow up -- and it is a lot more than just "speech making". But they have a tough job, and it won't happen immediately. Congress should enthusiastically support these new initiatives, and encourage the DOD as they (hopefully) expand this very difficult effort into all ten areas.

If fully effective, these actions will result in a total "cultural change" in the way in which defense business is done. Thus, there will be a need for detailed institutional changes, as well as continuous follow-up for implementation; both through policy actions and, most importantly, through individual program acquisition decisions -- again, requiring Congressional support.

The Congress and the American people are beginning to address not only the important defense question of "How much should we spend?", but are initiating dialogue on the equally important questions related to how we spend that money. If this direction continues, and if we address such questions as, "Are we selecting the right items?" and "How does the military-industrial-Congressional complex work together to achieve efficiency in the way in which we buy equipment?", then I believe the necessary changes can take place and we will, in fact, have a stronger defense posture for the increased dollars being spent -- giving renewed meaning to the phrase "arsenal of democracy."

However, without such changes, we will continue to spend more and get less -- an undesirable effect for both our national economy and our defense posture. The American people need, and deserve, and will demand a better use of their defense dollars.

Representative HAMILTON. I will just direct questions to you and you can choose between you as to who comments first. Maybe both of you would like to comment.

HIGHER RATE INFLATION IN THE DEFENSE SECTOR

Why is it we have a higher rate of inflation in the defense sector? Is that because we've got fewer suppliers? Why does that occur?

Mr. BROWN. I think it's because of the market basket of goods which DOD buys, just as the relevant rate of inflation would be different between you and I, because we like different commodities. The particular times DOD purchases are skewed toward centers of the economy that independently have higher rates of inflation. DOD, for example, is twice as energy-intensive as is the rest of the economy and has suffered, particularly in the late 1970's, relatively disproportionately from energy price increases. DOD is much less import dependent than is the domestic economy and has benefited much less than the overall economy from relatively low-priced imports in certain consumer goods categories.

My answer would be that it's the function of the mix of goods and services that DOD buys, rather than being something induced by DOD itself.

Mr. GANSLER. I would argue it's probably partly that, but it's due mainly to the unique way in which DOD creates its own inflation. If in fact, the DOD is going to place more orders from the same suppliers, instead of broadening their base, and insists upon, let us say, the same ratio of engineers to workers in a factory as the buildup starts to take place, then you will automatically get a situation in which the supply doesn't match the demand and, therefore, you create inflation.

For example, in engineering today, there's a bidding going on. Each firm that gets a new contract, bids for those engineers that are available. There's very little attempt made to create more engineers or to do the job with less engineers, which is the way you would normally tend to balance it off—for example, by using automated computer-aided design, or computer-aided manufacturing, which exists but isn't being implemented in defense, because there's no incentive for that productivity enhancement.

So they effectively bid up the cost within the existing bottlenecks, and stretch out the programs, and pays, in most programs, on a $1 per day basis; and, therefore, increase the costs of their goods and services.

Representative HAMILTON. What about the lack of dual sourcing, as you put it? Is that an important cause of increased inflation in the defense budget?

Mr. GANSLER. Yes, I think for two reasons. One is the bottlenecks it creates. If you have a single supplier who is already working three shifts, and you place more orders with him, he says.

> Thank you very much, and I'll put you in line. And by the way, I'll have to increase my delivery time. And in addition, I'll probably have to increase my prices, because I'm going to try very hard to expedite my orders.

The other thing it does is to eliminate competition. The psychological benefits have been shown very clearly. When there are two sources competing continuously for a share of the business—say, 50–50, 70–30, depending on their performance and price—then prices tend to go down. That's an incentive to introduce productivity enhancement into defense procurements. And prices will be driven downward.

If you have a single source, there is no incentive whatsoever, to reduce prices. So you have the combination of both factors taking place. I would say that the biggest benefit of dual sourcing is the introduction of honest competition into defense procurements which will drive costs down, encourage productivity enhancement, encourage people to do it for less, and produce more goods.

MAJOR IMPACTS OF THE REAGAN ADMINISTRATION'S RAPID DEFENSE BUILDUP

Representative HAMILTON. Let me ask each one of you to just summarize quickly, if you can, what you think the major impacts will be of the rapid defense buildup that the Reagan administration has put to the Congress. What do you think the major impacts will be, both good and bad?

Mr. BROWN. From an overall economic perspective, there will be some increased pressure on the Federal deficit, on inflation and on interest rates. From an industry perspective, there will be higher growth rates for the defense supplying industries than what they've experienced over the last decade by a significant amount. And as a consequence of that, significant demands for new investment in capacity, plant and equipment, and work force.

Representative HAMILTON. How about unemployment?

Mr. BROWN. There will be a positive impact on unemployment.

Representative HAMILTON. These you've set out on your charts with some specificity.

Mr. BROWN. Yes.

Representative HAMILTON. Incidentally, in your projections on the high-defense and the low-defense scenarios, Mr. Brown, is the high defense roughly the Reagan and the low defense the Carter proposal?

Mr. BROWN. The high defense is roughly the real program of the Reagan administration, viewing their spending in real, inflation adjusted, terms.

Representative HAMILTON. That's a 9.3-percent increase you say, real increase, every year.

Mr. BROWN. That's correct.

Representative HAMILTON. And the other is 5.5 percent. Why do you pick those particular figures? Where do you get 9.3 and 5.5 percent?

Mr. BROWN. The 9.3 is what the average annual rate of increase works out into in the form that the program was published.

Representative HAMILTON. Are you using their budget authority or budget outlay figures?

Mr. BROWN. I'm using both. Translating budget authority and outlays with the same sort of timing that they've been assuming in their submission.

Representative **Hamilton**. And the low-defense scenario is roughly the Carter proposal?

Mr. **Brown**. It is roughly the Carter administration budget with some adjustments for changes in personnel compensation and some adjustment toward the mix of the Reagan administration's program.

Representative **Hamilton**. Your deficit figures rise throughout, if I recall your tables correctly. How do you get to that conclusion, that the deficit goes up like it does?

Mr. **Brown**. It's a combination of not only the defense spending, but also the tax reductions and the cuts in the other governmental programs. It's a cumulative calculus, based on the Government's actions and the economy's response to them.

HIGHER INFLATION RATE IN THE DEFENSE SECTOR THAN IN THE OVERALL ECONOMY

Representative **Hamilton**. Do you believe the inflation rate in the defense sector will be higher than in the Federal economy overall for the next few years?

Mr. **Brown**. Yes; I do.

Representative **Hamilton**. Do you agree with that?

Mr. **Gansler**. Yes; in fact, it has been for the last few years. And we expect that to continue.

Representative **Hamilton**. So when the administration does not figure that in, they are making a mistake?

Mr. **Gansler**. Unless they, in fact, make some very serious efforts to take the corrective actions they have been talking about, but which I believe will take time, and will not happen without a lot more effort.

Representative **Hamilton**. Mr. Brown, you've got high capacity utilization rates exceeding 90 percent, in some industries at least, later on in the eighties. What's the significance of all of that with respect to military buildup?

Mr. **Brown**. Those are very high rates. There has not been an aggregate level that high, a level of capacity utilization, since the mid-1960's. There are numerous instances of individual sectors achieving those rates of capacity utilization. I would generally characterize periods where you have those high utilization rates as being a growing economy, low unemployment, considerable amounts of investment, probably increased pressures toward the types of microeconomic parts—specific bottlenecks that you're concerned about.

I think the part I most want to emphasize is that these are high utilization rates, even in the face of very substantial levels of investment during the 1982 through 1986 period. If that doesn't materialize, then I'd say the prognosis becomes much worse.

Mr. **Gansler**. I think it's particularly important when you look at the defense industry, particularly, at the defense suppliers, to recognize the importance of disaggregation of the labor force of the suppliers, because you just don't have the normal forging suppliers or the normal labor force, or the aggregate capacity utilizations. We are facing, in many cases in the defense industry today, grossly empty plants—in terms of capacity available. It's there, but you can't build a tank if you don't have a casting. That was exactly what the United States ran into even in 1974, down at the low point of your curve here.

Representative **Hamilton**. Did you say we've only got one company producing tanks?

Mr. **Gansler**. That's a true statement. We have the U.S. Army's tank arsenal really run by Chrysler. There are two plants that are not competitive. They are not, in fact, bidding against each other. There is the same supplier running two plants.

Representative **Hamilton**. Did I also understand you to say that it takes 3 years to increase production?

Mr. **Gansler**. Current aircraft production.

Representative **Hamilton**. Is that a total figure? You don't have specific models?

Mr. **Gansler**. This was looked at for the aircraft industry using war production lines, and it was found that this isn't due to empty plants; in other words, you may have empty tank and aircraft plants. In some cases it turns out you can build a plant faster than you can get a forging. So if you don't have landing gears or skilled labor, or specific required machinery and the plants are currently being used three shifts, then it takes approximately 3 years after an order is placed to start getting some of those parts.

Representative **Hamilton**. They'd be subcontractors?

Mr. **Gansler**. Subcontractors, critical assembly operators, labor. The lead time is that long. Now there are corrective actions that could be taken. It doesn't take 3 years to actually build the forging; It's just how long it takes to get through queue. Automation of the factories and additional factories is the way to address this problem. But, in order to solve the problem, they have to be addressed directly.

When defense makes a purchase from the same plant that they've always done business with and at the same time that plant simply buys from the same supplier they've been buying from, it simply increases the queue at both places but doesn't create a broadening of the market.

10 COMMANDMENTS ON DEFENSE PRODUCTION

Representative **Hamilton**. You know, I've run down through your 10 commandments on defense production. They seem very reasonable to me.

The question that first comes into my mind is, why hasn't somebody figured that out and done something about it a long time ago? What's the general answer to that?

Mr. **Gansler**. I think people have. This is not new; in fact they are things that have been recommended over the past few years.

The fact is, defense has not changed the way it does business very significantly over the past 20 years or more.

Representative **Hamilton**. Why is that? Why don't we get the kind of push, managerial push, to bring about these changes that you suggest and, I suppose, others suggest as well?

Mr. **Gansler**. People have been simply saying that as long as we can get the equipment by spending more money, we'll continue to do so.

Now there's a realization that we need to make some changes in the way we spend our money in order to get more equipment. What has been happening over the last few years is that we've been spending more money and getting less equipment.

In the past, we simply spent more money in order to get more but didn't try to correct what I think are institutional problems that have existed for a long time and have just gotten worse and worse.

Representative HAMILTON. This problem of unrealistic initial program budgets, which I guess the Congress and the executive are guilty of, what's the correction for that? What is there in the process that brings that about?

Mr. GANSLER. I believe it is the desire to get a program started.

Representative HAMILTON. So we underestimate and understate the cost?

Mr. GANSLER. Yes; we even encourage the contractors to do that by saying that we're going to have a competition, and the winner will have that contract for the next 20 years. Under those conditions——

Representative HAMILTON. So they understate costs in order to get the contract.

Mr. GANSLER. They have to.

Representative HAMILTON. How do you get around this problem?

Mr. GANSLER. I would like to see us get around it first by having two sources for most products. So therefore you would continue to complete the program for the rest of its duration rather than just one time.

Representative HAMILTON. But both of them would be understating the cost.

Mr. GANSLER. They would probably be much more honest, recognizing——

Representative HAMILTON. They would both understate the costs, but maybe they'd do it a little less than if you had only one source, right?

Mr. GANSLER. You would have the combination of that, plus the Government could put in realistic initial estimates. The Government does know the costs. They don't tend to use those in getting the program started, but they do have quite realistic initial estimates that could be used.

Representative HAMILTON. That's an interesting comment. So you actually think that when the Defense Department comes up here, that they know good and well the figures they are submitting to Congress are substantially under what they will eventually cost?

Mr. GANSLER. They believe them to be optimistic at best.

Representative HAMILTON. And that is very euphemistic.

Mr. GANSLER. I think the Congress knows it also.

Representative HAMILTON. I suspect we do.

Mr. GANSLER. And I frankly believe that once that process is started and there's only one supplier, there's very little incentive to do much except to have the prices go up instead of having the costs realized.

There is also a question, I guess it's Parkinson's law, but when you have one supplier and you've already got a sole source, he has a very big incentive to raise his costs.

Representative HAMILTON. You also said that there were some bottlenecks, did you not, already existing?

Mr. GANSLER. That's right.

Representative HAMILTON. I got the impression, Mr. Brown, from what you said that you did not think there were bottlenecks. Or maybe that's not an accurate impression.

Mr. **Brown**. I'm sure that at a micro level there are and will continue to be bottlenecks associated with this level of an increase in defense spending. My statement is that I don't see them developing into broad macroeconomic problems.

Mr. **Gansler**. There's not an inconsistency there, because the microproblems are the ones that affect defense in terms of defense goods. If the bearings go up by 100 or 200 percent and the castings and the connectors and so forth, that's going to affect defense goods directly.

Whether it will have a spillover effect into the overall economy depends upon other things.

DOD COMPREHENSIVE INFORMATION SYSTEM

Representative **Hamilton**. I am told there is no comprehensive information system in the Defense Department with respect to the capacity availability or constraints in the defense industry.

Are you aware of whether such a monitoring capacity exists in the Defense Department or elsewhere in Government? And do you believe it would be advisable to have such monitoring with respect to capacity in the defense industry?

Mr. **Gansler**. Here you run, in my opinion, into the exact same issue. There is data available within Defense and outside at the macrolevel—four-digit information—but that doesn't give you visibility at all as to whether you're going to be waiting 3 years to get an A–10 landing gear. That visibility does not exist today, and I believe should exist.

In other words, because it's a very small number of items and a small number of suppliers, it is possible to get that microvisibility. It definitely does not exist today. And the coupling between that information and the macromodeling does not exist today.

Mr. **Brown**. I think there's been a significant improvement in DOD's attempts to monitor the linkages between its spending plans and industry's performance. If you compare what is capable of being studied today and what problems can be identified, you have a much longer list than you would have if you did the same analysis 3 or 4 years ago.

I agree, there is still a substantial amount of distance to cover before one would have a comprehensive ability to study industry's capabilities.

Representative **Hamilton**. Are most of defense firms hesitant to increase their capacity?

Mr. **Gansler**. Yes.

Mr. **Brown**. Very much so.

Mr. **Gansler**. In fact, there's almost no incentive to do so. If you have a contract, your incentive is not to increase your capacity; it's to take the orders. If you don't have the contract, then you have even less incentive to increase your capacity.

LEADTIME AND BOTTLENECK PROBLEMS

Representative **Hamilton**. You testified, Mr. Gansler, before the Armed Services Committee that the leadtime problem is getting worse.

Does your impression continue in that same vein?

Mr. **Gansler**. Yes, it does. In fact——

Representative HAMILTON. Has it gotten worse? Where are the real problems?

Mr. GANSLER. The data that I've looked at most recently are maybe 6 month's old now. At that time, there were five areas of critical bottlenecks in terms of parts—bearings, casting, forgings, electrical connectors, and some semiconductor areas. There were also very significant bottlenecks building up in some critical labor skill areas.

Representative HAMILTON. Looking down the road for the next few years, would you anticipate that this bottleneck problem will get worse rather than better under the buildup?

Mr. GANSLER. It again depends on whether or not those bottlenecks are directly addressed or not.

Representative HAMILTON. Are they being directly addressed?

Mr. GANSLER. No.

Representative HAMILTON. The likelihood is, then, they're going to get worse.

Mr. GANSLER. In the absence of corrective action, I would have to believe so.

CORRECTIVE ACTION OF LEADTIME AND BOTTLENECK PROBLEMS

Representative HAMILTON. What kind of corrective action would you say—I guess you stated that in your testimony.

Mr. GANSLER. Yes. I would like to see, for example, the Government requiring, where these bottlenecks exist, that the prime contractors go to multiple sources and create second sources. It will cost a little bit of money up front, but the payoff will be enormous in the longer run. You'll have both competition and capacity.

SHORTAGE OF TRAINED WORKERS

Representative HAMILTON. What about this shortage of trained workers now? Everybody complains about that. Every manufacturing industry I've visited complains about it. What ought we to be doing about that? Is there not enough of the tool and die——

Mr. GANSLER. In fact, it's a catch-22. You ask the machinists why they don't expand their capacity, and they say they can't get the laborers. So it becomes a very real problem.

Again, I would think that the proper way to do that is, if we have a sector that we know we have a problem in, we should have some corrective policies. Maybe it's through the Defense Department allowing cost. I would say the training costs, for example, maybe should be made allowable. There should be programs to encourage the training in those targeted areas.

I am not advocating universal programs. The United States tends to do that. Whenever there's problem in a small area, we put out a new universal policy, and we lose the targeted advantage of that. But I'd like to see some targeted programs in those selected labor areas that the defense industry, particularly right now, is very short of.

Representative HAMILTON. So if you have got a shortage of tool and die makers, what do you do? Do you give incentives, then? Is that it—targeted incentives to the training of tool and die makers?

Mr. **Gansler**. Even through possibly the contracts themselves. That is, encouraging the prime contractors to train these people or allowing as expenses the training costs or possibly even some direct training programs.

Representative **Hamilton**. Very well, gentlemen, we thank you very, very much for your testimony. I've found it excellent in both cases and appreciate your appearance before the subcommittee this morning.

The subcommittee will reconvene next week on October 22 when we will hear from Alice Rivlin, Director of the Congressional Budget Office.

The subcommittee stands in recess.

[Whereupon, at 12 noon, the subcommittee recessed, to reconvene at 10 a.m., Thursday, October 22, 1981.]

[The following information was subsequently supplied for the record by Mr. Gansler:]

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THE HOUSE WEDNESDAY GROUP
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NEWS RELEASE
October 21, 1981

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CONGRESSIONAL REPORT PROPOSES MEASURES TO STRENGTHEN DEFENSE BASE

"Administration plans to increase defense spending must take into account the incapacity of key sectors of the defense base to respond quickly and efficiently," urges a Special Report on the Defense Industrial Base released by the House Wednesday Group (description attached).

The report, prepared for the group of House Republicans by Dr. Jacques Gansler, Vice President and Mr. Leon Reed, Analyst, of the Analytic Sciences Corporation, identifies problems of the defense base, and provides a series of legislative and administrative recommendations. Members releasing the report include: Bill Frenzel (MN), Ralph Regula (OH), M. Caldwell Butler (VA), Bill Clinger (PA), Joel Pritchard (WA), Bob Livingston (LA), Jim Coyne (PA), Hal Sawyer (MI), Bill Gradison (OH), Doug Bereuter (NE), Bill Green (NY), Lawrence Coughlin (PA), Tom Petri (WI), Stewart McKinney (CT), and Barber Conable (NY).

"Bold and creative actions from DoD, the Congress, and industry are needed to reverse trends of increasing defense base inefficiency and decreasing responsiveness," maintains the report. The report cites problems such as skilled manpower shortages, a shrinking supplier base, outdated production equipment, foreign dependency, and legal and administrative bottlenecks.

"More than money is necessary," stresses the report. It proposes: expanding the use of multiyear contracting, creating incentives for capital investment, requiring multiple sources for all critical parts, and establishing competition during production on most weapons systems.

The report advocates promoting a "design emphasis on lower equipment cost rather than exclusively on higher performance. The U.S. could profit from adopting the philosophy of adequate quality in sufficient quantity."

Other recommendations include broadening the R & D base, reducing foreign dependency, and improving industrial preparedness programs. The report proposes significant structural adjustments in the defense industry and the correction of deficiencies in Congressional decision-making processes.

The report cites the "chronic neglect of industrial readiness by the Executive Branch and the Congress." It blames policymakers' belief in short-warning, short-war conventional war scenarios and almost exclusive focus on strategic war for the nation's lack of industrial readiness.

"Fundamental changes are needed in the way DoD and the defense industry do business," asserts the report. "Even under present conditions of relatively high unemploy-

more

ment and available plants and equipment at the prime contractor level, the aerospace industry, for example, would require over three years to significantly increase production on existing lines, given no budgetary restraints, and full use of defense priorities."

"The steady erosion in the number of subsystem suppliers to the major contractors has resulted in a defense base far less capable and diverse than ten years ago," argues the report. It also says that "most available defense production equipment is over 20 years old and is very inefficient. The U.S. has a smaller percentage of new equipment in its machine tool inventory than any Western country."

The report cites an acute shortage of skilled defense manpower and technical personnel, particularly skilled production workers and engineers. Shortages exist for electronic and optical technicians, hammer operators in the forging industry, tool and die makers, and precision machinists. The U.S. is also facing a severe shortage of most types of engineers; the National Science Foundation predicts a 47% shortfall of industrial engineers in the 1980's.

The report further contends that "the present strategic stockpile is seriously out of balance with projected needs, with shortfalls in many of the most important defense materials such as cobalt, titanium, chromium, zinc, and aluminum." The stockpile contains $6.8 billion in excess of some goals and also contains material in poor or unuseable condition.

"In addition to the well known U.S. dependency on foreign raw materials, minerals, and energy, there is a growing dependence on foreign source suppliers of essential military parts and subsystems," contends the report. The number of domestic firms willing and able to do business with DoD is declining and U.S. firms are locating overseas. According to the report, "90% of U.S. semiconductors for military uses are assembled in vulnerable areas of the Far East, and no significant back-up capacity exists in the U.S."

The Members admitted that "Congress is not well organized to deal effectively with the complex and encompassing problems of defense procurement and preparedness." Congress needs to be able to recognize that problems are often found in inadequate implementation of existing laws, rather than in the laws themselves. The report advocates greater Congressional oversight and funding control to see that agencies implement existing laws.

The report enjoins Congress to improve investment incentives by changing DoD profit and cost reimbursement policies that inhibit contractor investment. According to the report, "since interest has traditionally been an unallowable expense and labor an allowable one, contractors have had little incentive to improve productivity." Productivity improvements would increase the unallowable costs (interest), reduce allowable costs (labor), and reduce profit (based on historic allowable costs).

The report also contends that "numerous regulatory requirements have been imposed piece-meal with no analysis of their cumulative impact," and proposes an immediate review of such regulatory effects.

Finally, the report advocates utilization of the Defense Production Act to expand domestic minerals and materials production capacity. The Act needs to be streamlined, updated, and its loan guarantee threshold raised. "The Congress should reestablish the Act's borrowing authority and extend the Act for 3 - 5 years," concludes the report.

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WG SPECIAL REPORT
ON
NATIONAL SECURITY AND
THE DEFENSE INDUSTRIAL BASE

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Prepared by:
Dr. Jacques S. Gansler
Vice President
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The Analytic Sciences Corp.
October 14, 1981

The Reagan Administration's proposed defense plan has provoked a national debate on the appropriate level and consequences of increased defense spending. Central to this debate, but often overlooked, is the pivotal role of the defense industrial base.

In the early 1940s, American industry geared up to produce military equipment, not just to supply the ten-million man U.S. Armed Forces, but also to provide a major portion of our allies' war material needs. Again in 1950, in response to the invasion of South Korea, American industry doubled production within a relatively short period.

Thirty years later, many question whether the U.S. defense industry is capable of rapidly accomplishing any significant increases in production, or, for that matter, if it is capable of maintaining efficient production at current levels. The Administration's FY '82 budget calls for increased production rates for practically every land, sea, and air weapons system.

While there appears to be a general consensus that the U.S. should increase resources devoted to defense, it is not clear whether the defense industrial base, as presently constituted, is capable of effectively utilizing present proposed budget increases. More questionable is the ability of the defense industrial base to "surge" -- to increase production rates rapidly to meet emergency needs.

Overview

Problems of the defense base have been identified by numerous academic and government studies. These include:

- Increasing lead times for defense systems, subsystems and components.
- Shortages of subcontractor capacity.
- Serious shortages of skilled manpower.
- Aging and increasingly inefficient plants and machinery.
- Rapidly increasing unit costs.

Because of these problems, fundamental changes are needed in the way the Department of Defense and the defense industry do business. These changes can be made within a free enterprise, private ownership, democratic system, and they must be made if the U.S. is to get the necessary military equipment for the increased budget dollars. In the absence of these changes, defense spending could simply feed the inflationary spiral.

Congress, through the implementation of needed legislative changes and through its funding priorities, can play an important role in the process of improving the capability of the defense industrial base. Perhaps more important, through effective oversight, Congress can promote some badly needed changes in DoD business practices.

In the past, Congress played a significant and useful role in enhancing U.S. defense production and mobilization. In the period immediately before and during World War II, the Truman Committee was of immeasurable assistance to war preparedness and production efforts. By operating outside the Executive Branch, and not representing any particular narrow interest, this committee was able to address broad policy questions. Specifically, it brought attention to matters that were being ignored or slighted by Executive agencies, and acted as a referee for interagency squabbles.

More recently, in the mid-1970s, numerous reviews of industrial and emergency preparedness by the Joint Committee on Defense Production served to focus attention on the serious decline in the industrial base and the unsatisfactory Federal preparedness organizational and planning systems. These led directly to the ongoing consolidation of Federal preparedness agencies into the Federal Emergency Management Agency (FEMA), and helped to initiate the current, full-blown re-examination of industrial preparedness.

Finally, last year, the Ichord Panel of the House Armed Services Committee brought the current defense industry problems into sharp focus, and gave them immediacy and legitimacy. Now that this issue has surfaced in media and government circles, it is important that Congress maintain the momentum for reform.

History

Many Federal statutes, some more than 100 years old, help to establish the framework for defense procurement and preparedness actions. However, three acts of Congress are especially important. These are:

- The Strategic and Critical Materials Stock Piling Act of 1946 -- to provide for stockpiling, in peacetime, and for protection against wartime shortages of critical materials.
- The National Security Act of 1947 -- to provide for broad-based mobilization planning by the National Security Resources Board. As a result of many Executive Branch reorganizations, FEMA now performs this function.
- The Defense Production Act of 1950 -- to provide general authorities for industrial preparedness planning and specific authorities for financial assistance to expand productive capacity; ordering priority contract performance; allocating materials; and economic stabilization measures needed in wartime.

While these statutes have been amended on numerous occasions, and while some of the authorities, such as those in the Defense Production Act providing for economic stabilization activities, have been allowed to lapse, their general provisions for industrial base planning have remained in effect and are available today. These legislative structures generally provide ample authority and flexibility for effective Executive agency preparedness programs. However, flexible authorities include the option for inaction. Industrial base planning and improvement efforts have seldom, if ever, satisfied the statutory mandates.

By the end of the Korean War, factors were already present which would lead to chronic neglect of industrial readiness by the Executive Branch and the Congress. Indirectly, these factors, and the resulting inattention to industrial preparedness, have caused many of the present-day problems.

Throughout the mid-1950s and early 1960s, concerns about industrial preparedness were forced into the background by the doctrine of massive retaliation. This doctrine allowed defense planners to assume that large-scale conventional wars were unlikely to be repeated. The focus on strategic war, and on a short-warning, short-war scenario for conventional wars, led planners to assume that issues such as combat sustainability and the ability to "surge" production rates were relatively unimportant. For all practical purposes, this focus ruled out any resource expenditures on the improvement of industrial responsiveness. This "short-war" assumption has continued to guide most military operations, force structure, and budget planning decisions.

The effectiveness of industrial planning and programs was also constrained during the mid-60s and early 1970s by Vietnam War consumption requirements. After the war, the perceived need to undertake long-delayed force modernization assumed paramount importance and had "first call" on defense funds. Concurrently, from 1969 through 1976, constant dollar defense procurement spending declined from $44 billion to $17 billion, the lowest level since right after World War II. As a result, the defense industry was allowed to deteriorate. Prime contractors were "kept alive" with low levels of production and a build-up of excess plant and equipment. However, the lower tiers of the defense industry — the parts, material and subcontractor levels — rapidly declined. As defense funds grew scarcer, thousands of companies went bankrupt or diversified into non-military work. For example, by the end of the 1970s, 25 percent of the Navy's suppliers had dropped out of defense contracting. This affected the nation's ability to increase production rapidly, and also prevented efficient achievement of near-term production goals.

Although specific competing demands for defense funds changed throughout this period, DoD planners and Congress consistently adhered to the view that industrial preparedness represented a very low priority for DoD funds and attention. Given these priorities, initiatives in this area were generally disregarded, regardless of the merits of the specific demand.

Current Situation

In the mid-1970s, a possible scenario was discussed:

1. World tensions heat up.
2. SALT negotiations break down.
3. U.S. military deficiencies are recognized.
4. The defense budget is dramatically increased.
5. The defense industry is unable to respond rapidly to needed increases in military equipment production.

At that time, few people concluded that such a scenario was plausible, and even fewer suggested that corrective actions were required. The scenario is now far more plausible, but few actions have been taken and today the need for corrective actions is more urgent. Even under present conditions of relatively high unemployment and available plants and equipment at the prime contractor level, the aerospace industry, for example, would require over three years to increase production significantly on existing lines, given no budgetary constraints and full use of defense priorities.

Currently, even greater concern for the efficiency of the defense base is required because DoD has begun to fashion a more realistic military strategy that would prepare the U.S. for a protracted war or limited actions worldwide. By rejecting the previous exclusive focus on the short-warning, short-war scenario, DoD has begun emphasizing the operational needs of active forces and initial combat capability. GAO's 1981 report on DoD's Industrial Preparedness concluded, "Industrial preparedness is closely tied to important planning assumptions, including warning time, conflict duration, and other essential factors such as the availability of strategic and critical materials, energy, transportation, and skilled people." GAO cautioned that although initial combat capability is important, "the failure to plan adequately with industry may mean that the U.S. can only fight a short war because no programs exist to bridge the gap between initial combat capability and war material needs should the U.S. involvement become prolonged."

Certain bottlenecks and inefficiencies have developed in the industrial base as a result of the previously noted planning and budgeting decisions, as well as the current weapons acquisition process. The major generic bottlenecks include:

MANPOWER

A shortage currently exists of skilled manpower and technical personnel required to design and produce sophisticated defense systems. Many of the problems of defense production — whether increasing lead times, low quality, underutilization of capacity, and foreign dependency — are directly attributable to lack of trained personnel. Particularly lacking are skilled production workers and engineers.

Production worker shortages exist for electronics technicians, optical technicians, hammer operators in the forging industry, tool and die makers, and precision machinists. For example, a recent National Tooling and Machining Association survey found a shortage of 60,000 journeymen machinists among its member companies, and predicts a 240,000 shortage by 1985. Exacerbating the problem is the fact that the average age of American's 300,000 machinists is 58 and most of them will retire during the next 8 years. The Administration's defense build-up is expected to increase demands for machinists by 8 percent in 1982 alone, and may divert labor from civilian commercial enterprises.

In addition, the U.S. is facing a severe shortage of many types of engineers. The National Science Foundation predicts a 47 percent shortage of industrial engineers in the 1980s, and the American Electronics Association predicts a shortage of 35,000 electrical and computer engineers by 1990. Prospects are not good for turning the situation around since only 5 percent of U.S. college degrees are awarded in engineering. In Japan, 20 percent of all Bachelors' degrees and 40 percent of Masters' degrees are in engineering. The Soviet Union annually graduates 300,000 Bachelor-level engineers and channels two-thirds of them into defense-related fields. In contrast, 52,000 is the most undergraduate engineers ever produced in one year in the U.S.

Any surge in defense demand will place further strain on already scarce manpower reserves. According to a report by Georgetown University's National Security Program, a manpower drain caused by the Administration's defense build-up could have detrimental impacts on U.S. civilian telecommunications, computer, and semiconductor industries.

STRATEGIC STOCKPILING

U.S. stockpiling policy also has followed an erratic course since the mid-1950s. It has been subjected to fluctuations in goals, sell-offs of inventory for political and economic reasons instead of national security considerations, and the absence of purchase funds throughout the 1960s and 1970s. In fact, President Reagan's March 31 announcement of planned purchases was the first in twenty years.

The present stockpile is seriously out of balance with projected needs. Shortfalls exist in many of the most important defense materials such as cobalt, titanium, chromium, zinc, and aluminum. According to FEMA's January 1981 Stockpile Report, only 24 of 61 individual materials or family groups meet or exceed stockpile goals. Shortfalls exist for the other 37 materials or family groups, and for 23 of these, holdings equal half or less of approved goals. Despite these shortfalls, the stockpile also contains $6.8 billion worth of materials in excess of goals. Much of the stockpile is also in poor and unusable condition. Most of the reserves were put into inventory prior to 1959, and types of alloys have since changed. As a result, funds are tied up in unnecessary or low priority holdings instead of being spent on the acquisition of new materials.

In large part, these problems resulted from Congressional unwillingness to approve stockpile acquisition or disposal legislation. Factors involved in these decisions include:

- Budgetary pressures, leading to a sentiment to "do it next year."
- Interest group pressures to support commodity prices by denying disposal approval, or to keep prices low by denying acquisition approval.
- Suspicions of alleged stockpile manipulations by various administrations.

As a result, an overall shortfall of $11 billion worth of materials was allowed to develop. A 1979 amendment to the Stock Piling Act attempted to correct this problem by prohibiting manipulations for economic or budgetary reasons, and by establishing a transaction fund from stockpile disposals (retaining receipts from stockpile sales as reserves for future purchases). Nevertheless, analysts note that it still will take a prolonged and expensive effort to make up for past stockpiling decisions. One suggestion is for GSA to step up immediately the testing to evaluate the quality of materials in the current U.S. stockpile.

The Defense Production Act provides authority to overcome critical materials shortages and solve other industrial base capacity problems by granting authority to make direct or contingent financial commitments including: loan guarantees, below market rate loans, price supports, purchase agreements, and research on alternative materials. These authorities could be used to underwrite development of domestic sources of materials or production or refining capacity. Indeed, these authorities, contained in Title III of the DPA, may be preferable to stockpiling as a method for solving materials shortages.

Actual acquisition of a material for the stockpile is extremely expensive, and under existing statutory provisions stockpile holdings can be used to compensate for supply interruptions only during a war (unlike the Strategic Petroleum Reserve, critical materials could not be released if minerals imports to the U.S. were subjected to an OPEC-type interruption). However, Title III can be used to acquire stockpile material at relatively low cost and reduce stockpile goals through the creation of additional capacity. The creation of one ton of domestic productive capacity equals three tons of stockpiled material under current stockpile planning.

Title III was used successfully in the 1950s to support the machine tool industry and to create the domestic titanium industry. During the years it was used, approximately $9 billion in contracts and agreements were executed with $2.1 billion in borrowing authority. Other major materials capacity expansion included such programs as aluminum, rubber, nickel, copper, manganese, and tungsten. However, by mid-1974, according to the Office of Industrial Mobilization, the $2.1 billion borrowing authority had been exhausted, principally because of losses in the resale of purchased materials and the practice by the various borrowing agencies of paying the interest owed the Treasury through further borrowing from the fund. This resulted in Congress cancelling the borrowing authority in 1974, and requiring funding of Title III projects through the regular authorization and appropriation process.

According to canvassing done by the American Defense Preparedness Association, this funding scheme is deemed the greatest contributor to the DPA's disuse (by the Commerce Department, FEMA, DoD, many industry associations, and consultant firms). Despite DPA program successes, no major financial assistance has been granted since 1967. In 1980, Title III authorities were adapted for the "transitional" synfuels program under the auspices of DOE.

SHRINKING SUPPLIER BASE

A serious erosion has occurred in the subcontractor and supplier base that provides components and parts to the prime contractors. Between 40 and 70 percent of defense work is subcontracted; subcontractors typically contribute more than 50 percent of a finished product's value. The steady erosion of the lower tiers has resulted in a defense base that is far less diverse and capable than it was ten years ago. There are fewer and fewer defense suppliers because low profit, one-year orders, cyclical demand, special military requirements, and excessive paperwork, all make defense business far less attractive than comparable civilian business. DoD's purchasing practices, aimed at the prime contractor level, exacerbate this problem. The result has been rapidly rising prices and extremely long lead times on deliveries from the remaining highly specialized defense suppliers at the lower-tier level. Many lead times have doubled or even tripled since 1978. By late-1980, the lead time for aircraft landing gear had increased from 52 to 120 weeks, aluminum small forgings from 55 to 125 weeks, and microcircuits from 25 to 51 weeks. In addition, many of the remaining suppliers are the sole sources for critical items. For example, there is only a single supplier for titanium extrusions, Air Frame bearings, and optics coatings — all necessary parts in major weapons systems.

Deficiencies at the subtier level, long lead times and inflated costs, are passed up the production chain until they affect the productivity of prime contractors. An example is the prime contractor for the F-16: General Dynamics. Despite the company having unused capacity, the lead time for a finished F-16 has increased from 28 months in 1977 to 42 months in 1980 — due to bottlenecks at the subcontractor level.

PRODUCTION EQUIPMENT

Most available defense production equipment is over 20 years old, and is very inefficient. For instance, according to the Defense Science Board, of the 26,000 government-owned metal-cutting and metal-forming tools, over 20,000 are in excess of 20 years old. The U.S. has a smaller percentage of new equipment in its machine tool inventory than any Western country. For example, while 60 percent of Japanese machine tools are less than ten years old, only 31 percent of U.S. tools are that modern. Those few modern, efficient production units, such as the large forges and the multi-axis, numerically-controlled airframe assembly machines, are now in use on three shifts and cannot accommodate increased demands.

The defense industry relies heavily upon forging and casting companies for essential items such as landing gear struts, tank hulls and turrets, helicopter rotors, and ship propellers. All large aircraft and the new M-1 tank require parts forged on 50,000-ton presses. Only two such presses exist in the U.S., both over thirty years old. In addition, only two 35,000-ton presses exist, both equally ancient. The forging and casting industry will undoubtedly be a bottleneck in the Administration's defense buildup.

Insufficient capital investment has resulted in such outdated production equipment. The highly cyclical demand for defense goods has combined with ill-conceived tax policies, record interest rates, and extensive environmental and safety regulations to discourage investment. Moreover, specific investment disincentives exist for defense contractors.

FOREIGN DEPENDENCY

In addition to the well-known critical U.S. dependency on foreign raw materials, minerals, and energy, there is a growing list of foreign-source suppliers of essential military parts and subsystems. This results partly from a decline in the number of domestic firms willing and able to do business with DoD, and partly from the overseas relocation of U.S. manufacturing facilities. Texas Instruments reports that 90 percent of U.S. semiconductors for military uses are assembled in vulnerable areas in the Far East, and that no significant backup capacity exists in the U.S. Also contributing to foreign source dependency are Memos of Understanding with American allies. These require the U.S., when making arms sales, to commit to reciprocal purchases from the foreign ally or arrange for co-production of some components.

The U.S. is dependent on Germany as the sole source for the 120 mm M-1 main tank gun, and on England for the A-7 aircraft engine and Harrier aircraft. Other foreign dependent situations include the TBA 35 mm gun from Switzerland, and the nitro guanidine explosive ammunition links from the Netherlands. DoD reports that the U.S. would become dependent on a single foreign source for combat helmets, hydroturbines, high purity silicon, and large forgings if these were not on a list of protected materials exempt from Memos of Understanding.

LEGAL AND ADMINISTRATIVE "BOTTLENECKS"

Within the past 15 years, a complex body of laws has been enacted relating to government contracting and social policies. Although achievement of social goals through government contracting is not a new policy, current requirements generally are more detailed and complex than previous policies. These have some detrimental effects on defense production, including delays in conversion of civilian production or initiation of new projects, as well as additional expense. While these requirements are all well-intentioned and their impact on defense production efficiency may not seem excessive, it is important to remember that bureaucratic bottlenecks can impede defense production just as thoroughly as production-capacity bottlenecks.

The cumulative effect of the above conditions is that the U.S. is paying approximately $50 billion a year for procurement of military equipment and not getting its money's worth. The U.S. is producing fewer units of military equipment each year -- fewer planes, fewer ships, and fewer guns -- while spending more real dollars. Increasing unit costs are a clear warning signal of declining overall productivity.

Moreover, there has been no planning or expenditure of resources for rapid industrial responsiveness to an increased production demand. As a result, little capability exists. An example "test case" was the increased demand for U.S. Army tanks in 1974, following the Middle East war. There was ample extra capacity at the prime contractor level to allow for a surge in tank production output, but the single producer of the critical hull and turret castings was already fully loaded with orders. It took years before the Army was able to increase its tank inventory in the field, despite the large increase in Congressionally-approved tank budgets and the urgent need for tanks.

Similarly, there has been no planning for potential compression of selected portions of the defense industry. When a program is reduced, cancelled, or completed, there is no procedure to phase down the workforce efficiently. Political fortitude is often lacking as incredible pressures are brought to maintain unnecessary programs -- thus draining valuable dollars from the procurement of other, badly-needed equipment.

Prescription for Improvement

Only very recently have these problems begun to be recognized. Four in-depth studies of the defense industrial base appeared in the last three months of 1980. Among these four studies, there is wide-ranging agreement regarding defense base problems and the needs and directions for corrective actions. In general, all found that, although increased defense expenditures will be required to correct obvious near-term deficiencies, structural changes are necessary to ensure that defense funds can be spent effectively.

Given the previously mentioned bottlenecks and other constraints, money alone will not cure defense problems. Applying defense increases to a strained supply base would increase demand for scarce output and would result in even higher prices and longer lead times. Equally serious is the possible deprivation of supplies needed by the commercial market, concludes a report by Georgetown University's National Security Program. For example, forgings are needed by commercial jet manufacturers, and semiconductor companies provide integrated circuits for commercial computers, machine tools, and consumer products. Thus, commercial buyers either will not receive needed parts, or will receive them at a higher price. Merely spending more dollars on defense could purchase an additional increment of military security at the expense of economic strength.

More than money is necessary. To improve the basic problems, it will be necessary to:

- Address bottlenecks and negative trends directly.
- Make significant structural adjustments in industry.
- Change the way defense business is done.
- Plan in peacetime for potential surges in production of selected military equipment.

Ten recommendations which would greatly strengthen the nation's defense industrial base are the following:

1. Expand the use of multi-year contracting -- particularly for the lower tier suppliers (e.g., through advanced procurement of parts and material). This is necessary in order to get a reasonable size of production quantities and reasonable stability into defense procurements -- both of which, in turn, provide economically efficient rates and encourage new capital investment. Despite the recent action by the House of Representatives authorizing multi-year contracting, the U.S. is still the only major nation which authorizes and appropriates its defense budget on a single-year basis.

2. Create incentives for capital investment. Current tax policy and DoD procurement and profit policy fail to provide sufficient investment incentives for the defense industry. Specific legislative and regulatory steps should be taken to provide greater financial incentives to the defense industry for capital investments in productivity-enhancing equipment and manufacturing technology.

3. Require multiple sources for all critical parts to broaden the lower tiers. Numerous independent analyses, based upon actual Defense Department procurements from multiple sources, indicate likely savings of greater than 30 percent through use of competitive sources, rather than relying on a single "qualified source." In most cases, the relatively small start-up costs for the second source would be more than justified. Lack of competition encourages inefficiency and price inflation, and sole-source suppliers become unresponsive to buyer needs.

4. Establish competition during production on most weapons systems. Again, added start-up costs will likely be more than paid for through continuous market competition for a larger share of the production buy. This would contrast with the current practice of having competition solely for the initial contract (frequently awarded based on a "buy-in"), which results in a sole source producer. This producer can then get away with constantly raising prices for the remainder of the program. The introduction of continuous production competition, or "dual sourcing," would also allow the government to reduce the amount of detail which it is forced to provide when dealing with and regulating a single source for military equipment. The natural forces of the market would require the competing firms to be far more efficient, to make significantly more capital investment, and to produce higher quality equipment.

5. Promote a design emphasis on lower equipment cost rather than exclusively on higher performance. This will allow a balance between quantity and quality. A few, very high performance systems are not sufficient for a protracted conflict. The Navy originally planned to buy more than 700 F-14's at approximately $12 million each, but finally purchased only 429 when the price rose to $25 million each. There has been a tendency to buy increasingly complex systems in smaller quantities — paying four to five times more money for an additional increment of performance. As systems become more complex, development times and production are delayed. The U.S. could profit from adopting the philosophy of adequate quality in sufficient quantity.

6. Broaden the R&D base. Bringing in smaller, innovative companies is one helpful option. For example, the invention of the micro-processor occurred at a company that employed but 12 people. Greater military performance advancement at lower overall cost should be encouraged by: providing less time for full-scale developments, e.g., through greater use of computer-aided design and manufacturing; redirecting funding priorities toward modifications of existing systems, instead of funding a totally new system each time a subsystem improvement is needed; accepting more unsolicited proposals containing new ideas.

7. Reduce foreign dependency. When economically attractive, the U.S. should continue to buy equipment from foreign sources, but it should also consider establishing domestic sources to compete with foreign suppliers. Again, the emphasis should be on competition, rather than on simply having the foreign source supply its country and the U.S. source supply the U.S. market. Further, to eliminate dependency when there is a very highly qualified foreign supplier, the U.S. should inititate R&D on the next generation of equipment in that particular area. This would help eliminate any long-term dependency, and put the U.S. into an extremely competitive position for future sales. Further, this would simultaneously allow the U.S. to regain its technological leadership in many areas where it currently lags.

8. Improve industrial preparedness planning and programs. Industrial response to potential demands for increased military production could be enhanced through selective planning and judicious expenditure of resources. In many cases, only modest additional expenditures would be required. For example, significant responsiveness improvements could be achieved by ordering and stocking critical parts and materials two to three years in advance; training skilled operators of critical production equipment for potential future multi-shift use; and planning for civilian conversion on selected military items. To date, few resources have been devoted to industrial preparedness measures because of the emphasis by many DoD planners on the no-warning, short-duration European conflict. Improved industrial preparedness actions and planning are important, not merely to expedite production "surges" in an emergency, but also to promote more effective achievement of near-term production goals.

9. Make significant structural adjustments in the defense industry. For example, when the U.S. was buying 3,000 fighter planes annually during the 1950s, it had approximately the same number of aircraft plants as today. Now, however, the U.S. buys only 300 fighter planes annually. Clearly, it would be more efficient to have only a few automated aircraft assembly plants. Adequate

competition would still be provided, and a more efficient system would be in place. In other sectors, such as the tank and armored personnel vehicle industries, the U.S. has had sole source suppliers for many years. Production competition should be introduced.

As a result of differences among industry sectors, each must be analyzed individually and corrective actions applied to improve the efficiency of specific sectors. In one sector, such as tanks and armored personnel vehicles, the U.S. may need to encourage competition by procuring from more than one major manufacturer. In another sector, such as aircraft, it may have too many plants for efficient operation. In addition, greater integration of civilian and military production is needed. This would provide increased economic efficiency and a greater ability to absorb the cyclical demands for defense equipment production.

10. Correct deficiencies in Congressional decision-making processes. Congress must share the blame with DoD and the defense industry for recent defense base problems. In some cases, certain Congressional actions have created problems or exacerbated pre-existing ones. In other cases, Congress contributed to the problem by failing to challenge and correct imprudent Executive agency policies.

To maximize the efficiency of our defense contracting system, Congress should not allow its focus to be diverted away from broad national security interests. In some cases, Congressional committees have mandated inefficient or unjustified contract "add-ons" to benefit specific local interests. Congress is under no obligation to accept passively whatever spending proposals are submitted by DoD and OMB, but it should make judgments on the basis of defense utility and economy, and not on the basis of local or special interests.

Congressional Role and Organization

Congress is currently not organized to deal effectively with problems as complex and encompassing as defense procurement and preparedness. Because of overlapping committee jurisdictions, nearly every standing committee has legislative jurisdiction over some matter which directly affects industrial responsiveness. For example, principal jurisdiction over defense issues resides with the Armed Services Committees. However, the Banking Committees, by virtue of their jurisdiction over the Defense Production Act of 1950, also have a significant role in defense issues. In addition, Congressional jurisdiction over FEMA, principal overseer of Executive agency mobilization planning, is fragmented among at least three committees.

Congressional authority is also widely dispersed even in the more limited sphere of contracting programs and policy. While the Armed Services Committee establishes general DoD contracting programs and policies, the Government Operations Committee has authority over Federal procurement policy. In addition, virtually any standing committee can impose requirements on the contracting process within its area of jurisdiction. For instance, the committees dealing with environmental matters, labor policy, and small business stimulation have all enacted requirements which apply uniquely to government contractors.

These requirements subject government contractors to greater legal hazards and enforcement burdens, and apply a higher regulatory standard to government contractors than to other firms doing business in the U.S. Legislation applying uniquely to government contractors and not to U.S. industry generally includes the Cost Accounting Standards system, Davis-Bacon, and Walsh-Healy.

The results of this dispersal of authority are two-fold. First, broad policy matters tend to be "orphans" and remain unclaimed or inadequately reviewed by any committee. Secondly, individual problems or programs are "up for grabs" and likely to be parcelled out piecemeal to any of a number of committees. In either event, the result is poorly coordinated Congressional action and review.

Consideration of industrial preparedness issues would perhaps be improved if there were a Congressional focal point outside of the normal authorization/appropriation process. This entity could review the broad issue of preparedness, comment on agency programs, address inter-agency disputes, and bring to the attention of OMB, the Administration, DoD, FEMA, and other Congressional committees, matters which were not receiving sufficient attention. To some extent, the Ichord Panel and the continuing activities of the HASC in the 97th Congress have served this purpose. However, the Armed Services Committee is constrained by its near-exclusive focus on DoD and military programs, and by its need to deal with annual authorization bills.

Optimally, a committee or subcommittee with a broad-based charter but no legislative responsibilities could perform this coordinating function. Limiting such a committee only to oversight would have two positive effects. First, it would free the committee from the time-consuming authorization/legislation process and allow it to implement a broad oversight program. Second, other committees would not be as likely to perceive it as a threat to their legislative jurisdiction.

As it begins to address problems of the defense base, Congress should be aware that many of the problems are found in the implementation of the laws, rather than in the laws themselves. For instance, authority presently exists to implement many of this report's recommendations. Failure to pursue preparedness planning and industrial base concerns can often be attributed simply to the perception that these activities are not as important as other Congressional demands. For this reason, not all problems can or should be corrected by legislative action. As a result, we recommend that Congress follow a three-step chain of preference in analyzing its response to industrial base problems:

- Through informal oversight or funding decisions, Congress should identify problem agencies and encourage them to implement existing law.
- If Congress concludes that agencies continue to implement existing law inadequately, then specific amendments directing agencies to undertake the desired actions should be considered.

- Where existing statutory provisions actually prohibit necessary actions or impose excessive requirements, Congress should amend existing statutes.

Specific Recommendations

Many of the above proposals could be implemented without further Congressional action. Where appropriate, Congressional oversight should focus on the effective implementation of previously enacted programs. Similarly, Congressional funding measures should be used to encourage and mandate improvements in industrial efficiency and responsiveness.

However, while many improvements in defense industrial efficiency and responsiveness could be accomplished within the provisions of existing law, legislative action is needed in some cases. The following improvements should be made in existing statutory requirements:

ALLOW MULTI-YEAR CONTRACTING

DoD's experience with multi-year contracting, although limited, clearly demonstrates the potential cost and time savings represented by this contracting technique. Expanded use of this procedure represents a fundamental contracting reform which could be implemented by Congress. Briefly, use of multi-year contracting would have the following effects:

- Provide improved stability in contracting, and make defense business more attractive.

- Permit contractors to order raw materials and components in larger, more economical lot quantities at a lower cost. GAO estimates savings of 10 to 30 percent and the Military Departments have estimated that upwards of $15 billion can be saved over the next five years by multi-year contracting.

- Permit advance ordering of long-lead-time parts to improve lead times for critical subsystems and components.

- Encourage contractors to make needed long-term capital investments.

Single-year contracting arrangements discourage advance purchasing of long-lead-time components or increased investment because such actions must be made "at risk." Under current contracting procedures, "non-recurring costs," such as investment in new facilities, may be reimbursed, but present law limits such reimbursement to $5 million. "Recurring costs," such as parts and materials, may not be reimbursed at all.

The 1982 Defense Authorizations bill, approved by the House, would rectify this problem by removing the $5 million ceiling and permitting reimbursement of recurring costs. Further delay is unjustified and sufficient experience and procedures exist for providing DoD the authority for multi-year contracting. Under present multi-year contracting authority, Air Force experiences have documented a $34 million savings (9.3 percent) in the GAU 8, Ammo program and a $10.6 million savings on the $54 million ALQ 155 contract. The annual authorization/appropriations process will provide ample protection against unwise use of multi-year agreements.

INVESTMENT INCENTIVES

DoD profit and cost reimbursement policies inhibit both contractor investment and improved productivity in a variety of ways. Interest has traditionally been an unallowable expense, while labor has always been recognized as a legitimate cost. Contractors have had little incentive to improve productivity because target profit rates have been based on cost projections, which in turn are based on historic allowable costs. Thus any productivity improvements would increase unallowable costs (interest), reduce allowable costs (labor), and reduce profit. The result is continued reliance on labor-intensive techniques, old and often obsolete contractor-owned machinery, and government-furnished equipment.

Perhaps the most significant investment disincentive is posed by a regulation known as Cost Accounting Standard (CAS) #409 (issued by the Cost Accounting Standards Board). This requires that depreciation on a contract's value reflect its equipment's historic or estimated useful life — an extremely slow rate. Changes in overall depreciation policy, while helpful to U.S. industry in general, will have little effect on defense contractors unless corresponding changes are made to CAS 409. However, modification of these regulations will require specific legislative action.

Currently no agency is responsible for the Cost Accounting Standards, since the Cost Accounting Standards Board no longer exists. Under the Defense Production Act, the Board was originally created as an agent of the Congress and given responsibility for making, amending, and rescinding rules for the implementation of CAS for all defense contractors. Since no funds have been appropriated for the Board, it ceased to operate in 1980. Numerous critics in government and industry complain that no government entity has authority to amend or rescind its standards, streamline its regulations, or grant exemptions to its rulings. Modifications are now dependent upon Acts of Congress. An effort should be made to transfer the Board's authorities elsewhere, and eliminate its murky status.

A move in the 96th Congress supported by GAO and OMB to transfer these authorities to the Office of Federal Procurement Policy failed in the Senate Banking Committee, principally due to the opposition of major defense contractors to elements of the proposal. The current situation is a nightmare for the Defense Contract Audit Agency and project managers who advocate a better regulatory review process with "user" participants. Resolution of CAS authority should be a high priority so that issues such as CAS 409 can be addressed.

CLARIFY CONGRESSIONAL INTENT

In two other areas, Congress should also clarify its intentions. One concerns application of the Vinson-Trammel Act, which sets limits on certain defense contract profit rates. Although provisions of this Act were theoretically reactivated with the 1979 demise of the Renegotiation Board, it has been recognized that the existing provisions are probably unworkable, and application has been temporarily deferred.

The second area of unclear intent concerns Defense Manpower Policy #4, the policy prescribing preferential treatment for firms in "labor surplus areas" (LSAs) -- an area of under or unemployment determined by the Department of Labor. Since 1977, the Appropriations and Small Business Committees have been locked in a struggle concerning implementation of the "Maybank Amendment," which, since 1953, has prohibited payment of price differentials on LSA-preferences for contracts. The failure of Congress to settle these controversies is a continuing source of confusion.

REVIEW IMPACT OF REGULATORY POLICIES

Legislative requirements intending to use government contracting as a method of achieving social goals can have a variety of negative impacts on defense production. They can delay initiation of work under such contracts, add to their expense, or disrupt efforts to diversify the defense industrial base. While wholesale repeal of such requirements in the name of national defense would probably be neither feasible nor desirable, it would be appropriate to give consideration to the impact of such requirements on industrial efficiency and responsiveness. These include:

- Methods to ameliorate delays in contracting. Many requirements, such as small business utilization plans or Cost Accounting Standards disclosure statements, must be satisfied before a firm can sign or begin work under a new contract or subcontract. These and similar statutory requirements can significantly delay programs. Means should be found to minimize these delays -- especially under crisis conditions.

- Systematize waiver/suspension procedures. While many socioeconomic policy statutes provide for "national security" waivers, these waiver provisions are often inconsistent, discretionary, or subject to legal challenge. For instance, the terms under which waivers may be granted are different for virtually every environmental law applied to defense contracts. Consideration should be given to systematizing and streamlining these procedures.

- Exemptions for smaller firms. Many socioeconomic or procurement policy requirements, while justified in general, may show insufficient benefits or may cause undue burdens when applied to smaller contracts or firms. Small firms seldom have sophisticated legal, accounting and reporting procedures, and compliance with regulatory requirements can constitute a significant barrier for such firms. Consideration should be given to a raising of the firm size and contract thresholds at which such requirements are applied.

Numerous regulatory requirements have been imposed piece-meal with no analysis of their cumulative impact. Such impacts have been detrimental to the defense base, and an urgent reassessment should take place.

UPDATE DEFENSE PRODUCTION ACT

As previously noted, Title III of the Defense Production Act provides broad authorities for financial assistance to expand productive capacity and supply. In the past, these authorities were used to provide targeted assistance to high-priority projects and industries; recently, these authorities have been allowed to languish.

The disuse of Title III authorities can mainly be attributed to Executive branch failure to develop and propose programs. However, some legislative changes could facilitate the use of Title III authorities:

- Streamline and update the DPA, and present it in a clear and concise form. Making the Act easier to understand is long overdue and can only increase creative ideas for its use by Congress, industry, and executive agencies. Specifically, eliminate outdated provisions such as Section 720 on the National Commission on Supplies and Shortages, since the Commission's authority expired in 1977 and its functions were placed elsewhere; modernize the Act's language, particularly references to the Korean War; and make the Act's Declaration of Policy a call to action in today's environment. Only the active sections of the DPA should remain in the Act, as was done with the Strategic and Critical Materials Stock Piling Revision Act of 1979.

- Raise the loan guarantee threshold level in Section 301 from $38 million to $80-$100 million. Given price increases over time and the amount of expenditures involved in any capacity expansion project, raising the amount triggering Congressional review merely brings the figure in line with current market prices. According to the Commerce Department's Office of Industrial Mobilization, the loan guarantee program, which had issued $3.7 billion in loans by mid-1975, had less than $51 million outstanding and had produced a net income to the government of $37 million from commitment fees and interest on loans purchased by the guaranteeing agencies.

- Reduce the mandatory House Armed Services Committee review from 60 days of continuous session of Congress to 30 days. The short expiration cycle of the DPA authority itself, coupled with this long review period, has created delays in offering assistance. As a result of Congressional recesses, the "60 days" can stretch to 5-8 months, and the DPA provides no authority for affirmative approval of non-controversial requests. Shortening the review period to 30 days of continuous session, and allowing positive approval of requests in a shorter period would minimize needless delays in granting assistance, while still offering the chance for adequate Congressional reviews.

- Re-establish Title III's borrowing authority lost in 1974. Many experts in and out of government concur on the necessity of granting $2 billion in borrowing authority to FEMA with certain conditions. Contingent liability against this borrowing authority could be figured on the basis of "probable ultimate net cost" to the government. This would include such considerations as losses on resales of materials, custodial and operating expenses, and administrative expenses. Beginning in 1951, the various Title III incentive programs were funded by participating agencies who were allowed to borrow up to $2.1 billion from the Treasury. The aggregate value of contracts could exceed the borrowing limit so long as the unrecoverable costs to the government did not exceed the total funds available.

- After making appropriate revisions, extend the Act for 3-5 years. Significant advantages would result without any real loss in Congressional oversight. Interior, Commerce, DoD, and FEMA support a five-year extension, as do numerous industry representatives and defense analysts. While Congress must, of course, set the exact extension period, longer extensions would create a better climate for industry participation, enhance industry's expectations about the importance given to DPA programs, and reduce some of the uncertainties involved. By opting for a longer extension, the Congress will not relinquish its oversight or amendment rights. In fact, if anything, not enough oversight and amendment has been occurring during the extension process. A longer extension would be a commitment to programs and their future and would provide Congress with an opportunity to review selected areas of the Act's implementation.

Modifying these provisions could remove needless obstacles to effective usage of the DPA. If Congress then found that Executive agencies still declined to utilize these authorities, an amendment could be considered to the DPA providing specific authorization for projects, as was done in 1979 for the synthetic fuels program.

Conclusion

The next few years are critical to our nation's national security posture. Will we get a significant increase in needed military equipment for the increasing defense budgets, or mostly an increase in the price of defense goods? The answer depends on the actions taken by the Executive Branch and the Congress. Administration plans to increase defense spending must take into account the incapacity of key sectors of the defense base to respond quickly and efficiently.

Steps have recently been taken. Both Houses of Congress have shown an increased awareness of the problems and the need for changes. Similarly, the recent management initiatives outlined by Deputy Secretary of Defense Frank Carlucci are major steps in the right direction. Some of this report's recommendations — multi-year procurement and efficient production rates -- are initiated or proposed in that management plan. But Congress must carefully oversee the implementation of these proposals, and spearhead other efforts as well.

Implementation of these initiatives will take great diligence, courage, and continuous vigilance. The effort must be made. Congress can play an important role by encouraging Executive branch actions or by approving needed legislative amendments.

Today, the nation agrees on the need for strengthening our security posture. Yet, unless the increased defense dollars are wisely spent, this consensus may be short-lived. The trends of increasing inefficiency and diminishing responsiveness must be reversed, but it will only be accomplished by bold and creative actions by DoD, the Congress and industry.

THE DEFENSE PROGRAM AND THE ECONOMY

THURSDAY, OCTOBER 22, 1981

CONGRESS OF THE UNITED STATES,
SUBCOMMITTEE ON ECONOMIC GOALS AND
INTERGOVERNMENTAL POLICY OF THE
JOINT ECONOMIC COMMITTEE,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10 a.m., in room 2212, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the subcommittee) presiding.

Present: Representative Hamilton.

Also present: James K. Galbraith, executive director; Richard F. Kaufman, assistant director-general counsel; and Chris Frenze, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative HAMILTON. The subcommittee will come to order. This morning the subcommittee resumes its inquiry into the economic consequences of the defense buildup. The testimony received so far identified several problems in the defense buildup. One set of problems is that due to the real cost of the defense program and what would happen because of inflation and overruns, the cost would exceed the administration's official estimates.

A related question is the extent to which defense spending will add to the Federal deficit. Another set of problems concerns the effects of the surge of defense procurement on the defense industries and the possibility of industrial bottlenecks as a result of shortages of physical resources and skilled workers.

All the private witnesses so far have warned about the bottleneck problem, especially in the medium term after the first 2 or 3 years of the buildup. It's interesting to note that the Chairman of the Council of Economic Advisers, Murray Weidenbaum, while assuring us that the present buildup will not be inflationary or cause bottlenecks in the short term, did express some concern about the longer term. He cautions about the combined effects of the private and military demands on industries where both civilian and defense work is done and also about the fact that real resource costs tend to exceed expectations in projects involving a great deal of new technology.

We are fortunate to have as our first witness today, Alice M. Rivlin, Director of the Congressional Budget Office. Ms. Rivlin has earned a reputation for objectivity and excellence and we look forward to her views about the issues that I mentioned.

Ms. Rivlin, you may proceed with your testimony as you wish.

STATEMENT OF HON. ALICE M. RIVLIN, DIRECTOR OF THE CONGRESSIONAL BUDGET OFFICE, ACCOMPANIED BY ROBERT HALE AND LARRY FOREST

Ms. Rivlin. Mr. Chairman, I'm delighted to be here and I have with me members of both my fiscal analysis and my defense analysis staff. My testimony deals with three subjects: the size of the proposed defense buildup, its macroeconomic effects, and its sectoral effects.

With your permission, I think it would be helpful to put my prepared statement in the record and then I'll summarize very briefly the first two sections and concentrate on the sectoral effects. I think the last area is perhaps the most different from what the subcommittee has heard already.

Representative Hamilton. Without objection, your prepared statement will be printed in the hearing record.

Ms. Rivlin. The prospective defense buildup, as you know, is very large in both absolute terms and in terms of the rate of growth. It is comparable in real size to the Vietnam buildup, but it differs in several other ways.

First, it is more heavily concentrated in what we have called the investment accounts—procurement, R. & D., and construction. On the other hand, compared to the Vietnam era, it starts from a lower base in terms of the size of defense spending relative to the overall economy. The current buildup also starts with a fairly slack economy.

We do not find the effect of the President's proposed defense program to be inflationary when it is viewed as part of the whole economic package that's planned by the administration and the Congress over the next few years. CBO's latest economic forecast shows inflation declining through 1984—as it already has somewhat—with reasonable growth in the economy after the current slowdown.

We do not consider the prospective economic program inflationary for two reasons: Anticipated major cuts in domestic spending will offset the defense increases, and we have quite a slack economy in which unemployment rates are fairly high and capacity utilization is not very high.

The problem, of course, comes as the economy approaches full employment. At that point, it becomes more and more difficult to accommodate both a large defense buildup and real demands from the other economic sectors for the same resources without inflation. We would warn—as I think all the other witnesses have warned the committee—that, as you look down the road and if the economy does recover well, it becomes more and more critical to offset the defense buildup either with tax increases or with additional cuts in domestic spending. Otherwise, large deficits are likely to have inflationary effects in the future.

The real question, on which there is less agreement, is that of bottlenecks. Quite apart from the macroeconomic effects of the defense buildup, one might get pressure on particular industries that would then spread to other parts of the economy.

Let me interject something that I forgot to mention, namely, in our view, which is consistent with others, the defense budget may cost more than is now anticipated for a number of reasons. One is that it seems likely that the deflators used in the defense budget are low. The Defense Department uses the GNP deflator while, in fact, over the last several years the specific deflators for defense goods have jumped more rapidly and this seems likely to continue.

SECTORAL EFFECTS OF THE DEFENSE BUILDUP

I will now return to the sectoral effects of the defense buildup. Some economic sectors will grow faster and others more slowly as a result of the shift in the composition of aggregate demand toward defense purchases and away from other types of spending. Capital and other resources, however, are imperfectly mobile in the short run. Thus, it is possible that, for a time, the defense buildup will cause demand in some sectors to outpace growth in the resource bases of those sectors. Some have argued that this would lead to bottlenecks, contributing to price increases in weapons systems and in commercial products competing for the same scarce resources.

Based on the available evidence, CBO cannot conclude that the defense buildup will cause bottlenecks in major industrial sectors over the next few years. The data on industrial capacity are simply too aggregated to allow an analysis of the likelihood of bottlenecks in smaller sectors that may be greatly affected by the defense buildup. Moreover, we are, again, much less confident about projections beyond the next few years. It is likely, however, that risks of bottlenecks will be much higher in 1985 and 1986 if defense spending and the economy expand briskly over the next 4 to 5 years.

Seven major industrial sectors supply at least 5 percent of their output for defense production, either directly as finished products or indirectly as raw materials and components to be used in finished defense products, as shown in table 1 of my prepared statement. Not surprisingly, the ordnance industry—defined here to include guided missiles and tracked vehicles as well as ammunition and small arms—devotes the highest percentage of its output to defense. In 1980, about 60 percent of this industry's gross output was induced by defense purchases. The transportation equipment and electrical equipment/components industries also commit a relatively large share of their production to defense; considered separately, the aerospace, shipbuilding, and radio/video equipment industries—which fall into the two previous categories—devote still larger percentages to defense. Other major industries with at least 5 percent defense-related output include mining, instruments, primary metals, and petroleum.

Many of these sectors are likely to experience higher than average growth over the next 2 or more years as a result of the increases in defense spending as well as the recovery of other final demands from the 1979–80 recession, as shown in table 1 of my prepared statement. In all these industries, except for petroleum, the growth in demand is projected to be near or above recent trends. In the absence of a detailed 5-year defense plan, these projections must remain tentative, however. We hope soon to receive better estimates based on more refined information developed by the Departments of Defense and Commerce.

Projections of above-trend growth in defense-related sectors do not necessarily imply serious bottlenecks. In most cases, the growth during the next few years will only partly close the gap between output and capacity. For example, the rapid expansion projected for the transportation-equipment sector reflects a large, but only partial, recovery by the now-depressed automobile industry. Let me illustrate further by examining several other key sectors.

With the possible exception of aluminum, it appears unlikely that widespread bottlenecks will develop in primary metals industries during the next few years. Capacity use is low at present and is projected to increase only gradually, in part because of ample foreign supplies. In the steel industry, for example, capacity utilization is expected to improve from today's relatively low level of 75 percent to between 85 and 90 percent by 1984. This would represent a return to profitable operations, but not to the excessively tight conditions of 1973–74, when utilization rates often stood near 100 percent.

Following 1 or 2 years of stable business, capacity utilization in the aerospace industry may well rise above recent historical norms. For most of this industry, however, those norms reflect an extended period of slack business. In 1978–80, for example, the industry enjoyed its only really high utilization rates in nearly a decade. If the buildup is not too rapid, most analysts believe that aerospace industrial capacity will be adequate over the next few years. One indication of this is that aerospace employment currently stands more than 16 percent below its 1968 peak. Even under optimistic forecasts, it will take more than a couple of years for employment to reach that earlier level. In addition, data collected by the Department of Defense indicates that military aircraft facilities have much surplus capacity at the prime contractor level. The Navy, for example, reports that the prime contractor for each of its major aircraft has a maximum production capacity at least four times larger than current shipments.

The shipbuilding industry will have abundant plant capacity for the foreseeable future and abundant manpower for the near term. Commercial shipbuilding is declining rapidly and is not expected to recover soon because of the collapse of the large tanker market. At present, the slump in the construction market has cut competition for some of the skilled workers needed in shipyards. Together, these trends have freed large amounts of shipbuilding capacity and manpower for use in the construction of all but the most sophisticated conventionally powered naval vessels, though problems still remain for some nuclear-powered vessels.

Some tightness could develop in the electronics industry, partly because of the explosive growth in the use of electronics in weapons systems. But it is hard to foresee extended problems in such a dynamic sector now subject to increasing competition from foreign suppliers. In 1978, the United States ran its first trade deficit—$3.7 million—with Japan in integrated circuits. By 1980, the deficit had reached $183 million.

These optimistic views of industry's ability to expand production in defense-related sectors in the near term are corroborated by recent decreases in order blacklogs and manufacturing leadtimes for some raw materials and components that are used in defense production, including castings, forgings, and electrical components.

Another reason for optimism is that, for most weapons, 1982 production levels could well have been anticipated almost 2 years ago. The weapons purchases planned by the Reagan administration for fiscal year 1982, although substantially larger than those proposed last January by the Carter administration, essentially equal the long-range targets set by the Carter administration almost 2 years ago. This is true, for example, for tactical aircraft, major surface combatants, and tracked vehicles. The gap is closed further by the recently announced reductions in defense spending, most of which involve cutbacks in procurement.

Some risks remain, however. Although the available evidence on sectoral capacity does not suggest that widespread bottlenecks will occur during the next few years, some problems could definitely still develop.

Some major sectors could have an adequate margin of capacity overall, yet still be incapable of producing enough of the specialty items required for defense. Unfortunately, we do not have credible data on capacity for more detailed sectors.

Even if capital facilities are adequate, shortages could develop if there are inadequate supplies of skilled labor. We know little about the demand for, and especially the supply of, many categories of skilled labor. Almost certainly, the defense buildup will increase requirements for scientists, engineers, and some skilled craft workers. There is some evidence that the supply response could be large. For example, the number of engineering students has gone up in response to increased job opportunities. It is difficult, however, to predict whether any future supply response would be fast enough to ease shortages before they would lead to price increases or delivery delays.

The above analysis of bottlenecks is based on projections of likely developments within industry during the next few years. The future always holds some surprises, however. If unexpectedly large growth occurred in private markets—such as construction, automobiles, and private capital goods—that compete with defense for scarce resources, bottlenecks could well develop, resulting in price increases that could contribute to higher inflation.

Finally, it should be recognized that the absence of bottlenecks does not imply the immediate cessation of price growth. This seems especially true for prices charged by defense contractors, which may be influenced more heavily by initial bids that are unrealistically low and by design changes needed to meet performance standards.

In summary, the administration has proposed a major defense buildup that will lead to sharp increases in defense budget authority and outlays. CBO's assessment suggests that the buildup should not have a major effect on inflation over the next few years, if the administration achieves all of its planned cuts in nondefense spending or increases taxes. The buildup could well exacerbate inflation in the more distant future, however, in the absence of sufficient compensating actions. Available evidence also suggests that widespread bottlenecks are unlikely in the near term. Nonetheless, some problems could arise as a result of lack of specialized capacity necessary to produce complex weapons, shortages of skilled labor, and unforeseen growth in specific—and competing—civilian sectors.

The desirability of the defense buildup must ultimately be judged, Mr. Chairman, by the requirements for an improved national defense, the degree to which the buildup enhances our defense capabilities, and the costs in foregone consumption, nondefense investment, and nondefense Federal spending. Particularly as the economy approaches full employment of resources, the Congress must balance the fiscal stimulus produced by increased defense spending or face a substantial risk of higher inflation.

Thank you, Mr. Chairman.

Representative HAMILTON. Thank you very much, Ms. Rivlin.

[The prepared statement of Ms. Rivlin, together with an addendum, follows:]

PREPARED STATEMENT OF HON. ALICE M. RIVLIN

Mr. Chairman, I am pleased to appear before this Subcommittee today to discuss U.S. defense spending and its effects on the economy. In March 1981, the Administration proposed defense spending increases that would boost defense budget authority to $373 billion by fiscal year 1986, more than double the 1981 level. Adjusted for inflation, using the Administration's estimates, this represents a real increase of about 50 percent between fiscal years 1981 and 1986.

The purpose of this testimony is not to evaluate the effectiveness of the proposed defense buildup in enhancing our national security, but rather to review and assess its likely economic effects. I will begin by highlighting the key features of the Administration's plan.

PROPOSED DEFENSE BUILDUP

Budgetary Effects

The Administration has requested $218 billion in defense budget authority for fiscal year 1982. This represents a real increase of about 13 percent over the 1981 level. Much of the additional spending would be for weapons procurement, although increases are also slated for military pay and operations and maintenance. Not since the beginning of the Vietnam era has there been such a large one-year jump in real defense budget authority. (The addendum to my testimony presents some historical comparisons.)

For the period between 1982 and 1986, the defense budget is projected to increase, in real terms, at an average annual rate of between 7 and 8 percent. Preliminary reports suggest that much of this increase, as in 1982, will be for procurement of weapons. But, in the absence of a detailed five-year defense plan, it is difficult to assess with a high degree of certainty how the spending growth will affect the federal budget and the economy.

Although budget authority reflects total spending commitments, it is often through outlays that the influences of budget initiatives are transmitted to the economy. CBO estimates that the Administration's defense budget authority request will lead to outlays of about $192 billion in fiscal year 1982, rising to $332 billion by 1986, if the Administration's assumptions on price increases are accurate. CBO's outlay projections are higher than those of the Administration because CBO estimates that budget authority for this period, particularly for procurement programs, will spend out more quickly than the Administration has assumed.

Possible Cost Growth

The above projections of budget authority and outlays reflect the Administration's estimates of future prices of defense goods and services. The Administration assumes that the prices of the items purchased by the Defense Department (excluding compensation) will increase at the overall inflation rate. Recent trends in weapons prices run counter to that assumption, however.

Over the last several years, the defense deflator for the noncompensation accounts has increased faster than the overall GNP deflator. Between calendar years 1972 and 1980, for example, the average difference amounted to about 1.7 percent per year; in the last two years of that period, it stood at 3 percent. Moreover, price increases for individual weapons systems have sometimes been staggering. For example, the unit prices of the Army's new M-1 tank and fighting vehicle systems have climbed by 76 percent and 49 percent, respectively, above the costs projected a year ago. The unit cost of the Navy's new F/A-18 fighter aircraft has grown by 43 percent. Even some systems that are nearing the end of planned initial purchases, such as the Air Force's F-15 fighter, have increased 5 percent in unit cost. The reasons for these increases are many and varied: unanticipated cost increases, technical changes to meet performance requirements, and inadequate initial bids.

If such unanticipated price increases recur in future years, the Department of Defense will be forced to request supplemental appropriations to fund the costs of the weapons it now plans to purchase. Without such supplementals, the pace of the real defense buildup would be slowed. Earlier this year, the Secretary of Defense stated that he would seek supplemental appropriations in the event of unanticipated inflation. Therefore, in assessing the effects of the defense buildup, CBO has assumed that the Administration carries out its real defense plan, even if that requires supplemental appropriations. 1/ Let me turn now to the possible economic effects of that plan.

POSSIBLE INFLATIONARY EFFECTS OF BUILDUP

Some view the Administration's defense budget as inflationary. There appear to be two basic concerns:

- o Inflationary effects of excess fiscal stimulus, and
- o Inflationary effects of potential bottlenecks.

Some analysts believe that it will be difficult to cut nondefense federal spending sharply enough to offset the large fiscal stimulus generated by the combined effect of the new tax cuts and the increases in defense spending. Lester Thurow, M.I.T. economist, and Henry Kaufman, Wall Street economist, have voiced this concern. Kaufman finds the effects on financial markets particularly worrisome.

Others—including Thurow—believe that, even if the Administration can offset the macroeconomic effects of the defense

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1/ Such supplementals would, however, tend to increase the federal deficit; this in turn would affect the economy.

buildup, the speed of the buildup will likely cause inflationary bottlenecks. Let me discuss each of these concerns in turn.

Macroeconomic Effects

Defense spending is only one of many factors influencing aggregate economic activity and inflation. CBO's latest economic outlook reflects our assessment of the combined effects of all aspects of the Administration's economic policy, including the proposed increases in defense spending. That outlook shows significant improvement in inflation through 1984. As measured by the implicit price deflator for gross national product, inflation is projected to decline from about 9.1 percent between calendar years 1980 and 1981 to about 6.6 percent between 1983 and 1984. In forecasting continued improvement in inflation, we assumed passage of all the cuts in nondefense spending proposed by the Administration, including cuts in programs yet to be identified. We further assumed no adverse changes either in world commodity prices or in the dollar exchange rate over the next couple of years. We also assumed that wage inflation would slow in response to the improved price performance.

We do not anticipate that the fiscal policy proposed by the Administration--including the defense spending increases--will undermine the favorable trend in inflation for two reasons. First, by our calculations, the overall fiscal policy proposed by the Administration is not extremely expansionary. The tax cuts and defense spending increases in themselves are stimulative; but in our view, they will be largely offset during the next few years by the proposed reductions in the growth of nondefense spending. Second, the margin of idle capacity currently in the economy can accommodate noninflationary growth. For example, at 7.5 percent, the national unemployment rate is above most benchmarks for full employment; and at 79 percent, the manufacturing capacity utilization rate is below both its historical average of 83 percent and even higher estimates of optimal use.

If the Congress chooses to continue the real defense buildup as the economy approaches full employment of resources, then offsetting cuts in nondefense spending or increases in taxes would be critical. Without such offsets, or counterbalancing monetary policy, higher inflation would be inevitable. Indeed, in the long run, increases in real defense spending can be achieved only through compensating sacrifices in consumption, private investment, and/or nondefense government expenditures. This adjustment will either be shaped by policy adopted by the Congress or be forced upon us by widespread price increases that will undermine some people's purchasing power.

Results of several macroeconomic projections support CBO's basic conclusions. Last year, for example, the Department of

Defense asked five major macroeconomic forecasting firms to estimate the effects of an annual 10 percent real increase in defense expenditures from fiscal years 1980 to 1986. They concluded that a defense buildup of this magnitude would have a negligible to small effect on aggregate prices, if it were offset by some combination of tax increases and nondefense spending cuts.

The same models suggested that, if financed by larger deficits, such a buildup would have increasingly inflationary effects in 1985 and 1986, when unemployment was projected to be low. Inflationary pressure would develop generally as a result of both demand and supply effects. Increases in defense spending, if not entirely offset by restrictive monetary policy, would have an expansionary effect on aggregate demand. The required federal borrowing would likely crowd out some private investment, thereby restraining capacity growth.

Macroeconomic models, however, sometimes do not capture potentially inflationary aspects of a defense buildup. For example, the more aggregated models may overlook the slowdown in productivity growth that could occur if an investment-oriented defense buildup caused the price of capital goods to increase, thereby inhibiting private investment. More importantly, the models may not fully reflect problems caused by sectoral bottlenecks.

Sectoral Effects

Some economic sectors will grow faster and others more slowly as a result of the shift in the composition of aggregate demand toward defense purchases and away from other types of spending. Capital and other resources, however, are imperfectly mobile in the short run. Thus, it is possible that, for a time, the defense buildup will cause demand in some sectors to outpace growth in the resource bases of those sectors. Some have argued that this would lead to bottlenecks, contributing to price increases in weapons systems and in commercial products competing for the same scarce resources.

Based on the available evidence, CBO cannot conclude that the defense buildup will cause bottlenecks in major industrial sectors over the next few years. The data on industrial capacity, however, are simply too aggregated to allow an analysis of the likelihood of bottlenecks in smaller sectors that may be greatly affected by the defense buildup. Moreover, we are again much less confident about projections beyond the next few years. It is likely, however, that risks of bottlenecks will be much higher in 1985 and 1986 if defense spending and the economy expand briskly over the next four to five years.

Growth of Key Defense Sectors. Seven major industrial sectors supply at least 5 percent of their output for defense production, either directly as finished products or indirectly as raw materials and components to be used in finished defense products (see Table 1). Not surprisingly, the ordnance industry (defined here to include guided missiles and tracked vehicles as well as ammunition and small arms) devotes the highest percentage of its output to defense. In 1980, fully 60.9 percent of this industry's gross output was induced by defense purchases. The

TABLE 1. DATA ON DEFENSE-ORIENTED INDUSTRIES (By calendar year)

	Percent of 1980 Gross Output Induced by Defense Purchases	Real Output Growth (In percents, annual rate)	
Industry a/		Actual 1967-1979	Projected 1982-1983
Ordnance	60.9	-2.3	8-10
Transportation Equipment	15.9	2.6	8-10
Electrical Equipment/ Components	11.2	4.7	6-8
Mining	6.7	1.9	2-4
Instruments	6.2	4.7	4-6
Primary Metals	5.8	1.6	5-7
Petroleum	5.6	3.0	0-2

SOURCES: Department of Defense and Data Resources Incorporated.

a/ Industries in accordance with the 1967 Standard Industrial Classification.

transportation equipment and electrical equipment/components industries also commit a relatively large share of their production to defense; considered separately, the aerospace, shipbuilding, and radio/video equipment industries (which fall into the two previous categories) devote still larger percentages to defense. Other major industries with at least 5 percent defense-related output include mining, instruments, primary metals, and petroleum.

Many of these sectors are likely to experience better-than-average growth over the next two or more years as a result of the increases in defense spending as well as the recovery of other final demands from the 1979-1980 recession (see Table 1). In all these industries, except for petroleum, the growth in demand is projected to be near or above recent trends. In the absence of a detailed five-year defense plan, these projections must remain tentative, however. We hope soon to receive better estimates based on more refined information developed by the Departments of Defense and Commerce.

Widespread Bottlenecks Not Likely in the Near Term. Projections of above-trend growth in defense-related sectors do not necessarily imply serious bottlenecks. In most cases, the growth during the next few years will only partly close the gap between output and capacity. For example, the rapid expansion projected for the transportation-equipment sector reflects a large, but only partial, recovery by the now-depressed automobile industry. Let me illustrate further by examining several other key sectors.

With the possible exception of aluminum, it appears unlikely that widespread bottlenecks will develop in primary metals industries during the next few years. Capacity use is low at present and is projected to increase only gradually, in part because of ample foreign supplies. In the steel industry, for example, capacity utilization is expected to improve from today's relatively low level of 79 percent to between 85 and 90 percent by 1984. This would represent a return to profitable operations, but not to the excessively tight conditions of 1973-1974, when utilization rates often stood near 100 percent.

Following one or two years of level or decreasing business, capacity utilization in the aerospace industry may well rise above recent historical norms. For most of this industry, however, those norms reflect an extended period of slack business. In 1978-1980, for example, the industry enjoyed its only really high utilization rates in nearly a decade. If the buildup is not too rapid, most analysts believe that aerospace industrial capacity will be adequate over the next few years. One indication of this is that aerospace employment currently stands more than 16 percent below its 1968 peak. Even under optimistic forecasts, it will take more than a couple of years for employment to reach that earlier level. In addition, data collected by the Department of Defense indicate that military aircraft facilities have much surplus capacity at the prime-contractor level. The Navy, for example, reports that the prime contractor for each of its major aircraft has a maximum production capacity at least four times larger than current shipments.

The shipbuilding industry will have abundant plant capacity for the foreseeable future and abundant manpower for the near term. Commercial shipbuilding is declining rapidly and is not expected to recover soon because of the collapse of the large-tanker market. At present, the slump in the construction market has cut competition for some of the skilled workers needed in shipyards. Together, these trends have freed large amounts of shipbuilding capacity and manpower for use in the construction of all but the most sophisticated conventionally powered naval vessels, though problems still remain for some nuclear-powered vessels.

Some tightness could develop in the electronics industry, partly because of the explosive growth in the use of electronics in weapons systems. But it is hard to foresee extended problems in such a dynamic sector now subject to increasing competition from foreign suppliers. In 1978, the United States ran its first trade deficit ($3.7 million) with Japan in integrated circuits. By 1980, the deficit had reached $183 million.

These optimistic views of industry's ability to expand production in defense-related sectors in the near term are corroborated by recent decreases in orders backlogs and manufacturing lead times for some raw materials and components that are used in defense production, including castings, forgings, and electrical components.

Another reason for optimism is that, for most weapons, 1982 production levels could well have been anticipated almost two years ago. The weapons purchases planned by the Reagan Administration for fiscal year 1982, although substantially larger than those proposed last January by the Carter Administration, essentially equal the long-range targets set by Carter almost two years ago. This is true, for example, for tactical aircraft, major surface combatants, and tracked vehicles. The gap is closed further by the recently announced reductions in defense spending, most of which involve cutbacks in procurement.

Some Remaining Risks. Although the available evidence on sectoral capacity does not suggest that widespread bottlenecks will occur during the next few years, some problems could still develop.

Some major sectors could have an adequate margin of capacity overall, yet still be incapable of producing enough of the specialty items required for defense. Unfortunately, we do not have credible data on capacity for more detailed sectors.

Even if capital facilities are adequate, shortages could develop if there are inadequate supplies of skilled labor. We know little about the demand for, and especially the supply of, many categories of skilled labor. Almost certainly, the defense buildup will increase requirements for scientists, engineers, and some skilled craft workers. There is some evidence that the supply response could be large. For example, the number of engineering students has gone up in response to increased job opportunities. It is difficult, however, to predict whether any future supply response would be fast enough to ease shortages before they would lead to price increases or delivery delays.

The above analysis of bottlenecks is based on projections of likely developments within industry during the next few years. The future always holds some surprises, however. If unexpectedly large growth occurred in private markets--such as construction, automobiles, and private capital goods--that compete with defense for scarce resources, bottlenecks could well develop, resulting in price increases that could contribute to higher inflation.

Finally, it should be recognized that the absence of bottlenecks does not imply the immediate cessation of price growth. This seems especially true for prices charged by defense contractors, which may be influenced more heavily by initial bids that are unrealistically low and by design changes needed to meet performance standards.

SUMMARY

In summary, the Administration has proposed a major defense buildup that will lead to sharp increases in defense budget authority and outlays. CBO's assessment suggests that the buildup should not have a major effect on inflation over the next few years, if the Administration achieves all of its planned cuts in nondefense spending or increases taxes. The buildup could well exacerbate inflation in the more distant future, however, in the absence of sufficient compensating actions. Available evidence also suggests that widespread bottlenecks are unlikely in the near term. Nonetheless, some problems could arise as a result of lack of specialized capacity necessary to produce complex weapons, shortages of skilled labor, and unforeseen growth in specific--and competing--civilian sectors.

The desirability of the defense buildup must ultimately be judged, Mr. Chairman, by the requirements for an improved national defense, the degree to which the buildup enhances our defense capabilities, and the costs in forgone consumption, nondefense investment, and nondefense federal spending. Particularly as the economy approaches full employment of resources, the Congress must balance the fiscal stimulus produced by increased defense spending or face a substantial risk of higher inflation.

ADDENDUM
THE PROPOSED DEFENSE BUILDUP:
SOME HISTORICAL COMPARISONS

By several statistical measures, the Administration's proposal would amount to the largest defense buildup since World War II, except for those associated with the conflicts in Korea and Vietnam (see Table A-1). The Korean buildup clearly was much larger and more abrupt. The most nearly comparable buildup occurred during the Vietnam years, although even in this case there are important differences.

If compared to spending levels in the immediately preceding years, the proposed buildup looks very similar to that of the Vietnam era. Defense budget authority, in real terms, increased by 34 percent between fiscal years 1965 and 1968; the Administration's proposal would result in a nearly 30 percent increase between fiscal years 1981 and 1984. Even more remarkable, the additional money to be committed in 1982 through 1984, when measured in constant dollars, nearly equals the additional amount committed in 1966 through 1968. This reflects the very minimal growth trend exhibited by the real defense budget since 1965.

When viewed relative to GNP, the proposed spending increases are smaller and more slowly paced than those that occurred during the Vietnam era. Between calendar years 1965 and 1968, for example, defense spending as a share of GNP climbed from 7.2

TABLE A-1. DEFENSE BUDGET AND SPENDING TRENDS

	Budget Authority (051) (By fiscal year, in billions of 1982 dollars)			Outlays (By fiscal year, in billions of 1982 dollars)			Expenditures (By calendar year, in billions of current dollars)		Defense as a Share of GNP (By calendar year, in percents)
Year	Amount	Change from Previous Year	Percent Change	Amount	Change from Previous Year	Percent Change	GNP	Defense	
1950	76.0	—	—	66.9	—	—	286.5	14.0	4.9
1951	212.8	136.8	180.0	104.9	38.0	56.8	330.8	33.5	10.1
1952	273.7	60.9	28.6	185.9	81.0	77.2	348.0	45.8	13.2
1953	221.3	-52.4	-19.1	197.4	11.5	6.2	366.8	48.6	13.2
1954	165.1	-56.2	-25.4	184.5	-12.9	-6.5	366.8	41.1	11.2
1955	146.6	-18.5	-11.2	160.0	-24.5	-13.2	400.0	38.4	9.6
1956	149.7	3.1	2.1	155.4	-4.6	-2.9	421.7	40.2	9.5
1957	158.7	9.0	6.0	159.9	4.5	2.9	444.0	44.0	9.9
1958	155.7	03.0	-1.9	155.8	-4.1	-2.6	449.7	45.6	10.1
1959	163.6	7.9	5.1	158.0	2.2	1.4	487.9	45.6	9.3
1960	157.9	-5.7	-3.5	156.5	-1.5	-0.9	506.5	44.5	8.8
1961	159.2	1.3	0.8	159.1	2.6	1.7	524.6	47.0	9.0
1962	181.2	22.0	13.8	170.9	11.8	7.4	565.0	51.1	9.0
1963	183.1	1.9	1.0	173.1	2.2	1.3	596.7	50.3	8.4
1964	175.8	-7.3	-4.0	172.5	-0.6	-0.3	637.7	49.0	7.7
1965	168.9	-6.9	-3.9	158.2	-14.3	-8.2	691.1	49.4	7.2
1966	204.3	35.4	21.0	175,9	17.7	11.2	756.0	60.3	8.0
1967	221.9	17.6	8.6	207.0	31.1	17.7	799.6	71.5	8.9
1968	225.6	3.7	1.7	225.3	18.3	8.8	873.4	76.9	8.8
1969	217.4	-8.2	-3.6	219.1	-6.2	-2.8	944.0	76.3	8.1
1970	196.3	-21.1	-0.7	202.0	-17.1	-7.8	992.7	73.6	7.4
1971	176.5	-19.8	-10.1	183.0	-19.0	-9.4	1,077.6	70.2	6.5
1972	171.3	-5.2	-2.9	171.8	-11.2	-6.1	1,185.9	73.1	6.2
1973	163.9	-7.4	-4.3	156.5	-15.3	-8.9	1,326.4	72.8	5.5
1974	158.1	-5.8	-3.5	153.2	-3.3	-2.1	1,434.2	77.0	5.4
1975	154.7	-3.4	-2.1	153.7	0.5	-0.3	1,549.2	83.0	5.4
1976	160.2	5.5	3.6	148.0	-5.7	-3.7	1,718.0	86.0	5.0
1977	168.5	8.3	5.2	150.6	2.6	1.7	1,918.0	93.3	4.9
1978	166.2	-2.3	-1.4	151.1	0.5	0.3	2,156.1	99.9	4.6
1979	167.7	1.5	0.9	156.8	5.7	3.8	2,413.9	111.2	4.6
1980	173.0	5.3	3.2	162.7	5.9	3.8	2,626.1	131.7	5.0
1981	193.0	20.9	11.6	174.1	11.4	7.0	—	—	—
1982a/	221.0	28.0	14.5	191.8	16.7	9.7	—	—	—
1983	—	—	b/	—	—	b/	—	—	—
1984	—	—	b/	—	—	b/	—	—	—
1985	—	—	b/	—	—	b/	—	—	—
1986	—	—	b/	—	—	b/	—	—	—

a/ Preliminary.

b/ The annual growth over this period is expected to average between 7 and 8 percent.

percent to 8.8 percent. Between 1981 and 1986, on the other hand, the defense share is expected to increase from approximately 5.6 percent to only about 7 percent.

If the noncompensation portions of the budgets--especially the investment accounts--are compared, the proposed buildup looks at least as great as that which occurred during the Vietnam years (see Table A-2). Between fiscal years 1965 and 1968, for example, real budget authority for defense investment increased at about a 9.0 percent annual rate, somewhat less than is anticipated for 1981 to 1986. Moreover, between calendar years 1965 and 1968, the share of GNP accounted for by defense purchases (excluding compensation for civilian and military personnel) increased by 1.4 percentage points, similar to CBO's projections for the period 1981 to 1986.

These disparate comparisons reveal an important distinction between the proposed buildup and the defense spending increases that occurred during the Vietnam years. The Vietnam buildup involved a balanced expansion of purchases and defense manpower. The currently proposed buildup, by contrast, is concentrated in the noncompensation components of the defense budget. The proposed increases in the noncompensation accounts are somewhat greater than those that occurred during the Vietnam buildup, whereas the real increases in force levels are much smaller.

TABLE A-2. TRENDS IN MAJOR DEFENSE CATEGORIES

	Budget Authority (051) (By fiscal year, in billions of 1982 dollars)				Expenditures (By calendar year, in billions of current dollars)		Defense Purchases as a Share of GNP (By calendar year, in percents)
	Investments a/		Other b/				
Year	Amount	Percent Change	Amount	Percent Change	Defense Purchases	Defense Compensation	
1950	18.6	—	57.5	—	—	—	—
1951	99.5	434.9	113.2	96.9	—	—	—
1952	137.8	38.5	135.9	20.1	30.1	15.7	8.6
1953	95.9	-30.4	125.4	-7.7	33.0	15.6	9.0
1954	46.0	-52.0	119.0	-5.1	26.2	14.9	7.1
1955	38.9	-15.4	107.8	-9.4	23.2	15.2	5.8
1956	46.6	19.8	102.1	-4.4	24.6	15.6	5.8
1957	53.9	15.7	104.8	1.6	28.1	15.9	6.3
1958	56.0	3.9	99.7	-4.9	29.3	16.3	6.5
1959	66.4	18.6	47.2	-2.5	29.1	16.5	6.0
1960	61.7	-7.1	96.2	-1.0	27.6	16.8	5.5
1961	63.6	3.1	95.5	-0.7	29.7	17.3	5.7
1962	77.6	22.0	103.5	8.4	32.7	18.4	5.8
1963	82.5	6.3	100.6	-2.8	31.4	18.9	5.3
1964	74.9	-9.2	100.9	0.3	28.9	20.2	4.5
1965	66.0	-11.9	103.0	2.1	28.4	21.0	4.1
1966	85.6	29.7	118.7	15.2	35.7	24.6	4.7
1967	85.7	0.1	136.2	14.7	44.3	27.2	5.5
1968	85.1	-0.7	140.4	3.1	46.9	29.9	5.4
1969	73.5	-13.6	143.9	2.5	44.5	31.8	4.7
1970	63.8	-13.2	132.5	-7.9	40.4	33.2	4.1
1971	55.8	-12.5	120.7	-8.9	36.4	33.8	3.4
1972	58.0	3.9	113.3	-6.1	37.8	35.7	3.2
1973	54.9	-5.3	109.0	-3.8	37.3	36.3	2.8
1974	51.0	-7.1	107.1	-1.7	39.3	37.7	2.7
1975	48.2	-5.5	106.5	-0.6	43.9	39.8	2.8
1976	54.1	12.2	106.1	-0.4	45.5	40.9	2.6
1977	61.2	13.1	107.3	1.1	50.8	42.9	2.7
1978	59.2	-3.3	107.0	-0.3	52.9	46.1	2.5
1979	59.4	0.3	108.4	1.3	59.0	49.2	2.4
1980	60.5	1.9	112.5	3.8	—	—	—
1981	75.1	24.1	117.8	4.7	—	—	—
1982 c/	98.3	30.9	123.5	4.8	—	—	—
1983	—	d/	—	e/	—	—	—
1984	—	d/	—	e/	—	—	—
1985	—	d/	—	e/	—	—	—
1986	—	d/	—	e/	—	—	—

a/ Calculated as the sum of the procurement; research, development, test, and evaluation; military construction; and family housing accounts.

b/ Calculated as the sum of the military personnel, retired pay, operations and maintenance, and various small noninvestment accounts.

c/ Preliminary.

d/ Annual growth in defense-investment budget is projected to average between 8 and 10 percent for 1983-1986.

e/ Annual growth in noninvestment accounts is projected to average between 3 and 5 percent for 1983-1986.

CONFIDENCE IN CBO DATA

Representative HAMILTON. One of the features of your prepared statement which stands out with regard to the general question of bottlenecks is that you don't have a lot of confidence in your data.

Ms. RIVLIN. That's right.

Representative HAMILTON. Let me just illustrate. In your prepared statement you say the data on industrial capacity simply is too aggregated. You indicate that when you talk about the available evidence on the sectoral capacity. You say that we just don't know very much about the demand for and supply of many categories of labor.

So I have the impression that on this whole question of bottlenecks, the raw data that the economists will look at is not as good as we would like it to be and, therefore, your conclusions aren't as sound as you would like them to be. Is that a fair statement?

Ms. RIVLIN. That's correct, but I think another thing must be borne in mind. It is true that we don't have good information on very specialized resources and the bottlenecks that might occur in industries producing or using them. But, if the resources are very specialized, they are not likely to be very widely used in the economy so that limits the inflationary effect.

Representative HAMILTON. There's a statement that was made and frequently quoted by former Defense Secretary Laird: "The worst thing that could happen for the Nation would be to go on a defense spending binge that would wreak havoc on the economy."

I take it you just don't see any prospect of that in the proposed budget increases for defense.

Ms. RIVLIN. Well, I'm not sure what the context of the Laird statement was.

Representative HAMILTON. I'm not either. I just remember the statement.

Ms. RIVLIN. I think the danger of not spending our defense resources wisely is a real one, but that's a different question. What I'm saying is that from the point of view of the economy as a whole—the macroeconomic effects—we do not see any reason why the currently planned defense buildup has to be inflationary as long as it is offset, as the President planned, with nondefense cuts and tight monetary policy.

DEFENSE BUILDUP TO BE SMOOTH AND WELL PLANNED

Representative HAMILTON. One of the points Mr. Weidenbaum made when he was before us was that the buildup was going to be smooth and well planned. Apart from the question of how the buildup is implemented, it's your impression, I take it, that you basically agree with him. Do they have a good plan for increasing defense spending.

Ms. RIVLIN. I wouldn't want to endorse the goodness of the plan. What I do agree with is that it is fairly well laid out in advance. It's not going to surprise people if it is followed. Furthermore, on the major procurement of the big items, it is a fairly smooth buildup and is quite consistent with the Carter plan of a couple years ago. As those big items got more expensive, however the procurement was stretched out under the Carter budget, and in essence the Reagan administration is coming back to roughly the plan of 2 years ago for big items like tanks.

CONFIDENCE IN DOD PROJECTED FIGURES

Representative **Hamilton**. How much confidence do you have in the defense figures, the projected figures? You say in your statement that the GNP price deflator and DOD price deflator vary. What was it—as much as 3 percent in the last 2 years, as I recall your testimony?

Ms. **Rivlin**. That's right.

Representative **Hamilton**. It always seems to me that the projected figures are far short of what the Defense Department actually needs. Your testimony is based on their figures being accurate. How much confidence do you have in the accuracy?

Ms. **Rivlin**. Not very much, and I make that point in the testimony—really two points. One is that historically we have seen major increases in the unit price of weapons systems procured. That's been for a number of reasons—unanticipated inflation, increased complexity of the weapons systems as they moved into production—but the examples are dramatic and we expect that this will continue.

The other point is that the Defense Department has consistently underestimated inflation. Now, to a large extent, we all have. The CBO has also underestimated inflation over the last several years. But the Defense Department uses the GNP deflator as its estimate of inflation.

Representative **Hamilton**. Why do they do that? I don't understand why they do that. If the historical evidence is clear, why do they do it? Just because the figures work out better?

Ms. **Rivlin**. I think there are two reasons. The OMB imposes the use of the GNP deflator on the Defense Department as part of a general governmentwide rule. The rationale for it may be that, if they used the more specialized defense deflators which have risen faster and are likely to continue to rise faster, this assessment increase may become a self-fulfilling prophecy; they're worried that that, in itself, will escalate their costs. I don't find that argument terribly persuasive. I have testified elsewhere that it would make more sense to get a realistic estimate of the cost of procurement by using more specialized deflators.

Representative **Hamilton**. How about our congressional budget—what deflator did we use?

Ms. **Rivlin**. We use more specialized deflators for defense which give us higher estimates of the anticipated cost. For the next 5 years, 1982 through 1986, CBO estimates of the President's program would run about $81 billion more just because we used higher deflators than the administration has.

M-1 TANK UNIT PRICE JUMPS 76 PERCENT

Representative **Hamilton**. I just find it very difficult to see how unit prices like the one you cite on the M-1 tank can jump up 76 percent in a single year's time. That seems absolutely incredible to me, and the fact that you mention a few factors doesn't really explain to me how that happens.

Ms. **Rivlin**. I don't think anybody is very clear about how it happens. A lot of it is adding to the complexity of the weapon system. I've driven the M-1 tank. It's a pretty fancy vehicle, as the Army is delighted to tell you, and it has become——

Representative HAMILTON. It ought to be with that kind of increase.

Ms. RIVLIN. That's right. It's become much more expensive as they added to its capability.

DEFENSE PROCUREMENT BOTTLENECKS

Representative HAMILTON. Now let's see. Some of our people that have testified from the private sector are much more pessimistic about this bottleneck problem than you apparently are. A couple of our witnesses who are going to testify a little later on today emphasize that there are already bottlenecks. One witness will say that they already exist in the small business sector, which is an important part of the defense procurement industry, and Mr. Gansler last week suggested that the bottlenecks already exist and he points out, as I recall, that the bottlenecks are not in the future but in the present.

What do you say about that? Don't you see any bottlenecks even at the moment?

Ms. RIVLIN. We don't see bottlenecks, or certainly not important ones, at the level of aggregation for which we have data. It looks to us as though the economy is fairly slack and the important sectors—the ones I mentioned, particularly automobiles, shipbuilding, and aircraft—could absorb a good deal more growth in the short term. We are much more worried about the long term.

Representative HAMILTON. Mr. Wenglowski is going to say later on today that by his calculations the rise in procurement relative to GNP, excluding services, will be four times the amount of the increase that occurred in Vietnam and that kind of a surge will certainly create a bottleneck.

How do you respond to that kind of an observation?

Ms. RIVLIN. I'm not saying that there won't be bottlenecks, but it doesn't seem to us that the program as a whole is likely to put widespread upward pressure on prices. There are some differences from the Vietnam buildup. We are at a lower level of defense spending than we were then relative to gross national product. We have a slacker economy. We have anticipated this buildup for some time. I think all of those factors weigh in the other direction, but that's not to say there won't be some problems.

Representative HAMILTON. Mr. Gansler said a lot of the defense procurement equipment was 20 years old and outdated and he thought that might be a factor in some of the bottlenecks that might occur. These factors that you mentioned, I take it, lead you to believe that that bottleneck problem is simply not going to be that severe?

Ms. RIVLIN. Which is not to say that many of the proposals made by Mr. Gansler aren't good ones for holding down unit costs and getting more efficiency in the defense industry. The problem of unanticipated rising unit prices in defense is very serious. I testified on this yesterday before Senator Roth's Committee on Government Affairs and we believe it must be taken seriously by the Congress. The problems lie in the motivations of both defense managers and contractors who have every incentive to come in with a very low estimate in order to get the weapon system started and then it tends to escalate over time.

CBO'S PROJECTIONS BASED ON CONGRESS ENACTING ADMINISTRATION'S NONDEFENSE BUDGET CUTS

Representative HAMILTON. Now your projections here are based on the Congress enacting all of the administration's nondefense budget cuts and that includes, I presume, the unspecified cuts as well?

Ms. RIVLIN. That's correct.

Representative HAMILTON. And if we don't do that, what happens?

Ms. RIVLIN. If you don't do that, you have a larger deficit. If you don't do something about it—it doesn't have to be exactly what the administration is recommending—but if you don't have either offsetting nondefense cuts or increases in revenue or some combination of the two, then you will get escalating deficits which will be particularly inflationary as the economy approaches fuller capacity. So I don't want to minimize that problem at all.

Representative HAMILTON. What's the impact of the recent news on the recession which, Mr. Baldrige told us yesterday, is necessary? What does that do? Does that change your projections at all now? Incidentally, did the Congressional Budget Office project a recession this year?

Ms. RIVLIN. We projected a slowdown at the end of 1981, as almost everyone did. We expected, as of our last projections, the resumption of growth at a fairly strong level in 1982.

Representative HAMILTON. Early 1982?

Ms. RIVLIN. We said fairly early 1982. We never are very specific about exactly when. That projection was based on two things. One was the tax cut taking hold in 1982 and the other was that interest rates would come down some based on our assumption that the Federal Reserve would be at the high end of their monetary growth target rather than below the low end, as they are, on M1B at the moment. Interest rates are coming down some. We have not redone this forecast.

Representative HAMILTON. When was that done?

Ms. RIVLIN. It was released in September and it was actually done in July.

Representative HAMILTON. When is your next one coming out?

Ms. RIVLIN. The next one will come out in January. I think what could be said now is that the economy is weaker than most of us expected, even though people were expecting some weakening at the end of 1981, and generally forecasts are moving in the weaker direction for 1982. Most forecasters who are projecting growth in 1982 are expecting it to be a little later rather than a little sooner, based on more recent information.

What that does is reinforce the statements I made about the economy being fairly slack in the near term. It doesn't change the prospect that, as it turns around in the long run, you may have more inflationary problems.

DEFENSE BUILDUP NOT INFLATIONARY

Representative HAMILTON. You talked about the prospective defense program not being inflationary and you mentioned you reached that conclusion because of the spending cuts we had made and, I guess, the spending cuts that are projected to be made under the President's budget as well as the slack economy. But the other part of it is the enormous revenue loss we have as well. You did not mention that. But if you put the very sharp increase of expenditures for defense along with the revenue loss and you balance that only on the restraint side with $36 billion or $35 billion in cuts this year, it seems to me you come out heavily on the stimulus side.

Ms. RIVLIN. If you have no further spending cuts, that's absolutely correct. We've made that point.

Representative HAMILTON. So you're saying to us, then, that this defense buildup is not going to be inflationary, but that's only if we enact the spending cuts, including the unspecified reductions and maybe more?

Ms. RIVLIN. That's correct.

DEFENSE PROCUREMENT BOTTLENECKS NOT INFLATIONARY TO THE REST OF THE ECONOMY

Representative HAMILTON. Now Mr. Schultze pointed out here last week that while he did not believe that the bottlenecks would cause inflation in the rest of the economy, there was not very much known about the linkages. How much is known about the effect or the linkages that could be produced by bottlenecks and the wage and price increases that accompany defense industry bottlenecks?

Ms. RIVLIN. Not very much. I read Mr. Schultze's prepared statement and I would substantially agree with it. I think he makes the point that there isn't much known now and that there might be substantial increases in the price of very specialized resources. He makes a further point that he thinks this is a military, not an economic, problem because it wouldn't likely spread to the rest of the economy. But I think CBO is rather agnostic on that.

DEFICIT COULD REACH $80 BILLION BY 1984 BECAUSE OF THE DEFENSE BUILDUP

Representative HAMILTON. He also said he thought the deficit, because of the defense buildup, could easily reach $80 billion by 1984.

Ms. RIVLIN. I don't remember what exactly he was assuming then. Our most recent projection that even with all of the cuts, including the unspecified cuts that the Congress has already committed itself to in the last budget resolution, we would expect a deficit in 1984 of about $50 billion. If you don't get the additional cuts, it could easily be $80 billion.

CHANCE OF A BALANCED BUDGET IN THE FORESEEABLE FUTURE

Representative HAMILTON. And do you see any chance of a balanced budget in the foreseeable future, in the next 3 or 4 years?

Ms. RIVLIN. I think a balanced budget by 1984, which is the date we usually talk about, is unlikely. I think the real question is will the deficit go up or down? That's the most important thing. If the direction is down, it is less likely to be inflationary. If the direction is up, then we are all in trouble.

SATISFACTORY INFORMATION ON DEFENSE PROCUREMENT BOTTLENECKS

Representative **Hamilton**. Is anything being done to increase the quality of the data on this kind of a problem? Almost all of you who have testified have emphasized that to us as you try to project the impact of increased defense spending.

Ms. **Rivlin**. The first step is for the Defense Department to specify its exact plan since we do not yet have a detailed 5-year plan.

The second problem relates to the level of aggregation of economic data generally, the kind of data that the Department of Commerce produces. I think that's partly a question of working over the existing numbers for recategorizing so we can look at the sectors most affected by defense. I might let Larry Forest, who's worked on this, respond to that, if he would.

Representative **Hamilton**. Mr. Forest.

Mr. **Forest**. Mr. Chairman, there really are two questions implicit in your inquiry. First is the question: How can we obtain satisfactory information on defense-specific bottlenecks? Obtaining such information would involve an extensive effort—looking at very detailed sectors, specified by people who know which production lines, components and raw materials are critical to the specific weapons that we will be purchasing in the next 5 years.

The other question is a more general one: How do we obtain good information on capacity in rather broad sectors throughout the economy? The answer to that depends on how important you think the data is for guiding economic policy. It doesn't come free of charge; obtaining it is fairly costly, and not a great deal of money has been dedicated to that effort in the past.

Representative **Hamilton**. Those statistics are gathered by the Department of Commerce?

Mr. **Forest**. There are three or four different Government agencies involved in gathering information on capacity. There are two bureaus within the Department of Commerce, the Bureau of the Census and the Bureau of Economic Analysis. They collect such data in surveys that they send out to manufacturers. The Federal Reserve also develops information on capacity that is in part a byproduct of those surveys, and also a byproduct of its industrial production index. There are a number of private organizations that also collect such data. Trade associations, for example, sometimes collect that kind of information from their members.

ABSENCE OF A 5-YEAR PLAN FROM DOD

Representative **Hamilton**. Ms. Rivlin, you mentioned in your comments just a moment ago the absence of a 5-year plan from the Defense Department. Are they supposed to submit that to the Congress each year with their budget?

Ms. **Rivlin**. Yes.

Representative **Hamilton**. And they did not do so?

Ms. **Rivlin**. No. They were revising plans and did only the first year. They have not submitted the details for the whole 5 years.

Representative HAMILTON. What you have then is the gross numbers, but you don't have the details. Is that it? Is that what you're talking about in the 5-year plan?

Ms. RIVLIN. That's correct.

Representative HAMILTON. And if you had it, how does that help you? Well, let me put it the other way. Without it, what kind of problems does it cause you?

Ms. RIVLIN. It means essentially that we are making our own projections based on past information about the specifics of the plan and we are not quite sure they are right.

Representative HAMILTON. All right. So you have to make a lot of assumptions about the defense budget, how much of it is procurement, for example, and how much is to manpower and the various elements?

Ms. RIVLIN. We know aggregate levels, It's the subdetail that we don't have. Let me get Mr. Hale to expand on this.

Mr. HALE. That's basically right. What we don't know, for example, is the kinds of ships that are going to be built, which could be important. One particularly important consideration is how those ships are divided into numbers of nuclear vessels and numbers of conventional vessels. None generally, we lack the ability to evaluate independently what the cost of the buildup would be. For that we need to know how many tanks, how many aircraft, exactly how many people and so forth. At present we have to depend on the Department of Defense to give us aggregate numbers that are consistent with their detailed plans. I think it is possible that we will have the supporting detail within a month or so. We certainly should have it nearly next year with the next year's plan.

Representative HAMILTON. How late are they?

Mr. HALE. Normally, the 5-year plan is submitted in January with the budget or in February shortly following the budget. As Ms. Rivlin said, this year the new administration is making major changes and they were able to arrive at the detail only for 1982. So I think we won't probably have it for at least a month and perhaps until we get next year's budget.

Ms. RIVLIN. We don't suspect them of withholding information. We suspect them of not making up their minds.

Representative HAMILTON. One of the things we constantly hear was that one of the causes of our present economic problem was the rapid buildup during the Vietnam period and how it distorted our budget and caused inflation a couple years down the road; the seeds of inflation were planted back in that period and it didn't really affect on us for several years.

Is it possible that we're going to go through the same phenomenon now, that later on we're going to look back and say, my goodness, if we had just seen this back then we could have taken anti-inflationary moves?

Ms. RIVLIN. Yes, I think it's possible, although we have that experience to guide us now. I do think that the fiscal policy of the Vietnam period was, with hindsight, one of the great mistakes. There was an effort to increase domestic spending at the same time that defense buildup was going on without adequate compensation on the tax side.

Also, the economy was running at a high level of employment. All of those things together put a lot of inflationary pressure on the economy. We should avoid those mistakes now.

TOTAL DEFENSE BUDGET OBLIGATIONAL AUTHORITY THROUGH 1986

Representative HAMILTON. We had some figures put into the record the other day on the defense budget total obligational authority for 4 to 5 fiscal years through 1986—obviously, projected figures for the future—in constant dollars, 1982 constant dollars. It shows that we are going to be spending 12 percent more on defense than we did in the peak years of Korea and 32 percent more than in the peak year in Vietnam. I guess you have some——

Ms. RIVLIN. We have a much bigger economy than we had then. I think both sets of figures need to be before you.

Representative HAMILTON. Can you help me with that? How much bigger an economy is it?

Ms. RIVLIN. Yes, I can. The defense share of the gross national product, I think, is one of the things that's relevant. In the 1950's, it was quite high. The peak year was 1953 in which it was 13 percent of gross national product. In the Vietnam——

Representative HAMILTON. Under the Reagan proposal we're going up how high?

Ms. RIVLIN. We're going up from about 5.6 percent to close to 7, and so we're about at 6 percent right now; so that's a smaller share. And it was a smaller share in the Vietnam period than during Korea. Vietnam was a less massive war in comparison to the economy, but the buildup for Vietnam took us to almost 9 percent in 1967, 8.9 percent, and——

Representative HAMILTON. So you see major differences between them?

Ms. RIVLIN. I see major differences, but they are not all on the side of there being little inflationary impact because the other thing to remember is that this buildup is much more heavily concentrated in real things as distinct from manpower. It's procurement.

Representative HAMILTON. Well, I have a few more questions but you have heard the bell, Ms. Rivlin, and I will not keep you while I go answer a vote here. We thank you very, very much for your testimony. It was good, as always, and we thank you for the contribution you made to the subcommittee's work.

Ms. RIVLIN. Thank you, Mr. Chairman, and if you have further questions now or any time, please submit them and we'll get back to you.

Representative HAMILTON. Thank you. The subcommittee will stand in recess.

[A short recess was taken.]

Representative HAMILTON. The subcommittee will resume its hearing. We will ask both of our witnesses to come forward, if you would, please: Gail Schwartz and Gary Wenglowski. We are very pleased to have both of you with us this morning and, Ms. Schwartz, we'll let you begin with your statement.

STATEMENT OF GAIL GARFIELD SCHWARTZ, PRESIDENT, GARFIELD SCHWARTZ ASSOCIATES, ECONOMIC AND DEVELOPMENT CONSULTANTS, WASHINGTON, D.C.

Ms. SCHWARTZ. Thank you, Mr. Chairman. It's a great pleasure for me to be here this morning to talk about the effects of defense procurement on small businesses and vice versa. I have submitted a prepared statement and most of it will be included in my oral presentation, but I would request that the entire prepared statement be included in the hearing record.

Representative HAMILTON. Without objection, that will be done.

Ms. SCHWARTZ. Defense procurement will be diffused among some 92 industries producing for defense. Most of the expenditure will be for aircraft, missiles, ships, ammunition, and communications equipment.

Both recent trends and current indicators suggests that defense procurement in this and subsequent years, when it is projected to increase sharply to some $79 billion in 1986, will put severe strains on the domestic economy. Many of the benefits presumed to accrue from defense spending may not materialize. The firms that are most likely to suffer from the strains and to miss out on the benefits are small businesses.

THE ROLE OF SMALL BUSINESS IN DEFENSE PRODUCTION

Small businesses of fewer than 500 employees receive an estimated 20 percent of DOD prime contract awards. Firms of this size comprise about one-fourth of all firms producing for the Defense Department. But there is presently no overall estimate of the value of defense-related procurement from small subcontractors. In a study we are completing in New York City, we found that over 55 percent of the firms producing for defense are subcontractors. Subcontractors in the second through fifth tiers of defense procurement are small businesses. Therefore, our conservative "working estimate" is that small business contributes at least $15 billion to the current $40.3 billion procurement program.

But small firms are more important in the defense production chain than the mere volume of their contribution might suggest. They often produce the pivotal or crucial elements of systems—elements which, though they may be needed in very small quantities, can cause whole systems to fail or to be delayed so long as 120 months in many instances recently recorded. To recall an old adage, for want of a nail the shoe was lost; for want of a shoe the horse was lost; for want of a horse the army was lost. It is no different in the age of automated weaponry. Wars may be lost if small firms can't produce the right product of the right quality at the right price, on schedule.

Of the nine major industry groups producing for defense, 97 percent have fewer than 500 employees, but a very large number of firms have fewer than 100 employees and a great many have fewer than 50 employees. If the stricter measure of smallness is applied, 87 percent of the establishments have fewer than 100 employees. And I'll note parenthetically, Mr. Chairman, since you're interested in data, these data refer to establishments. They have no relationship to firms; that is, to what would be the contracting entity. That is one of the great difficulties of determining exactly what the role of the small business is in the defense system.

If small businesses are to fulfill their traditional role in defense production, they have to be able to respond rapidly to increased demand occasioned by defense buildup. But most small businesses operate at full capacity, or near full capacity, and this is particularly the case in the machinery and electronic industries. These industries provide an estimated 28 percent of shipments to the DOD. While the national capacity utilization index is around 76, capacity utilization in these industries—which are characterized by many small companies as well as a few giants—is 87, sometimes higher. Thus, in order to respond to a surge in defense spending, as a result of defense procurement, they have to expand capacity, which requires one or more of the following; purchase of new equipment, expansion of existing plant, relocation to larger quarters, and hiring of new workers.

Items 1, 2, and 3 require capital. Item 4 requires capital and often a long and expensive training period. Both are burdens to small firms.

Most small firms are companies or closely held corporations. They rely heavily on debt financing. Often their sales volume is insufficient to attract venture capitalists and their ability to raise equity capital is very limited. Thus, if they have to expand plant, or purchase new equipment, they must borrow; 21 percent interest on collaterialized loans is a fair estimate in this region of currently available terms. If a business were to purchase a $175,000 machine—not an expensive piece of equipment—the interest payments would be $36,750 per year, or about the equivalent of the average earnings of a successful self-employed machinist.

Even if small firms are willing to extend their financial liability to increase output, they face the problems of finding and hiring skilled labor. In both electronics and machinery there is an acute shortage of skilled labor in many regions of the country. The Department of Labor estimated—conservatively, since it did not anticipate the defense procurement surge—that there would be a demand for 660,000 workers in the nonelectrical machinery sector between 1978 and 1990. Of these, 170,000 jobs would be for craft workers and professional and technical workers. There is ample evidence that the pipelines in the educational and vocational educational systems are not able to feed that many trainees into the apprentice systems. Bright and talented youngsters are not going into these occupations in sufficient numbers. Many of those who are interested in the occupations do not have the increasingly sophisticated basic skills needed to make a good apprentice—especially math and an understanding of computer programing. This is a common complaint among small businessmen among these sectors in the economy. You can hear it everywhere in the Nation, including Indiana. Since modern machinery is highly sophisticated, much of it automated and multifunction, old fashioned manual dexterity is a grossly insufficient attribute to offer a prospective employer.

While labor shortages naturally affect all firms, they affect small firms more than large ones. Small firms usually cannot offer the wage-and-fringe benefits that large firms do. Many small firms complain that they provide the on-the-job training—and incidentally, there is about a 7-year period before a machinist becomes a journeyman—after which their personnel is pirated away by larger firms offering more attractions, more pay, and more security.

I'd like to talk a minute about the state of our knowledge. That these problems exist is only beginning to be recognized. A series of hearings by the House Armed Services Subcommittee recorded much anecdotal information about the role of small business in defense production. The increasing dependence of larger contractors and subcontractors on overseas suppliers, especially Japanese and German suppliers was noted, with its obvious detrimental implications in times of crisis. In recent weeks the Secretary of Defense has been discussing defense production requirements with firms in Europe, in the evident anticipation that the U.S. economy cannot meet defense needs.

These are ominous signs and suggest that a much more thorough and systematic review of the problems is required. Clearly it is not in the national interest for the United States to be deliberately exporting its defense-related jobs. It is not good for the jobless; it is not good for entrepreneurs; it is not good for morale, and it is not good for the defense posture of the United States to admit, or even suggest, that we cannot gear up to meet our self-defined program.

We have begun a research program designed to answer some of the uanswered questions. We have completed two studies of defense production by small firms in Maryland and in New York City, and we have underway a major study under a grant from the Small Business Administration.

Findings from the research we have completed are interesting and instructive:

In New York City, only five of the firms in the six industries surveyed had more than 100 employees. The six industries were all in the machinery and electronics sectors. In Maryland, all of the firms surveyed had 25 employees or fewer.

In both instances, over half of the respondents produce for defense. In New York City, nearly 60 percent of the respondents are in the defense market.

In both cases, a substantial proportion of the firms, that are not defense subcontractors—Maryland 19 percent and New York 36 percent—would like to be.

New York City firms have a large proportion of their output in defense-related production. Over one-fifth—22.5 percent—of the firms had 75 percent or more of their output in defense production.

The New York industry with the greatest output in defense-related production is communications equipment; all six respondent firms in that industry which produce for defense produce at least 50 percent of their output for defense.

In both of our studies, we found that the shortage of labor and the high price of capital inhibited firms from expanding their defense production, and particularly, inhibited firms from entering the defense market. In New York City, over 38 percent of the survey respondents indicated they were interested in financial assistance to enter or expand defense production to enable them to participate in defense production.

Our Small Business Administration study will determine the proportion and level of total employment in the small firms in defense industries; the proportion and level of total value shipments in the defense-oriented industries produced by small firms; and whether small firms' position within the defense-oriented industries has changed in recent years. It will be completed within 6 months.

Now I'd like to speak for a moment about the question of inflation.

In general, if domestic expenditures for defense keep up with authorizations, the inflationary impacts in certain sectors of the economy may be substantial. To the degree that output in the 92 defense-related industries expands faster than normal, and demand for production factors correspondingly rises faster than normal, inflationary pressures will result. The actual rate of price increases will vary by industry and by production factor. It will depend on many considerations, including the degree to which substitutions are possible, the number of suppliers of a product, labor agreements, and the terms of Defense Department contracts themselves.

In several of the key industries involved in procurement, the immediate effects of defense procurement may be manageable. Annual average real output increased 2.89 percent between 1968 and 1978. In industries in which we are interested, such as chemicals, petroleum, rubber, and plastics, and electronic equipment it was close to 4 percent; and in communications, real output increased 8 percent annually; 1980 capacity utilization rates in these industries were 83, 88, 77, and 82 percent, respectively. This suggests there is room at least in the near term to expand production without increasing capacity in a major way.

But in machinery, capacity utilization was 91 percent, substantially higher than the 8.7 percent or so with which businesses are comfortable.

Capacity utilization in manufacturing firms with assets under $10 million was lower, on average, than for larger firms, which suggests that small firms might not be the source of inflationary pressures; but small firms would be the victims of such pressures, both in terms of higher capital costs—large firms can borrow at lower rates as well as sell equities—and higher labor costs.

Data on backlog of orders for defense procurement as we entered the new fiscal year have not yet been published. The most recent data available show a backlog in U.S. Government purchases of aircraft and parts of $36 billion. It is difficult to come to any conclusion other than this: If the Government spends what it authorizes, or a substantial fraction of it, administration inflation targets cannot be met. These are 9.7 percent in fiscal year 1982 and 5 percent in fiscal year 1986.

In the event that small firms cannot gear up to produce for defense, several things might happen. Larger firms may choose to make internally rather than to buy the parts that they need, but this can create diseconomics of scale because large firms generally should not maintain the capacity in-house to produce small runs of specialized and limited products. More purchases could be made overseas, but this will add to an already alarming level of imports of critical products, especially machinery and electronic components; it will do nothing to solve our high unemployment rate; and it will cause a drain on the balance of payments.

What are the implications of these possible occurrences for public policy? Of course, the pressures on the economy that can be generated by a defense buildup can cause one of three possible responses with respect to defense spending itself. It can cause us to delay purchases or it can cause us to reduce the amounts of purchases that we make. If we don't do either of those things, then it will have a major effect on the budget deficit, as you've already heard amply discussed.

Clearly, either way, we would have to raise taxes or we would have to reduce spending in other areas other than defense in order to maintain a balanced budget.

It seems to me that the problem the United States faces with respect to defense procurement illustrates the difficulties inherent in an economic policy that purports to deal only with supply-side issues but is, of course, implemented in a demand-driven world. Production factors go to the highest bidders. Who, in the larger national interest, "should" get those factors? For example, if wildcatting or cattlefeeding or even genetechnology is attracting capital while the producers of prosaic parts for airplanes or tanks are starved for capital, the free market allocation of capital may be very detrimental to longrun national concerns.

In theory, assured multiyear defense contracts would enable many firms to obtain both the capital and labor they need to meet defense contractual obligations, at a price. In practice, there is ample evidence that this will not be the case for small firms. Thus, two suggestions come to mind:

First, it is appropriate to consider means of diverting investment to small firms in vital industries. Mechanisms for doing so include subsidized below market interest rates; small business debentures; defense contract-related loans at subsidized rates; extra Federal tax benefits for equity investments in small defense-related firms.

Second, it is appropriate to consider a crash program to train workers in labor-scarce occupations and to prepare youngsters now in school to enter these occupations. There is ample precedent for such a program, most recently in the post-Sputnik National Defense Education Act. A conterporary national defense training program should concentrate on skills needed by the industries that produce for defense, and by the military. Small firms would provide ideal training grounds but they would probably need financial assistance, especially in such matters as insuring the very expensive, sophisticated equipment, that must be used by trainees.

Presumably the U.S. defense budget reflects a real need for weapons and personnel. The defense budget should not be used as a monkey wrench to tinker with the budget deficit. The defense capital budget should be established on 5- and 10-year budget cycles because we have seen in the past how big the backlog can get. Once annual outlays are affirmed on the basis of the long-term budget, the impact of those outlays on inflation, on the labor force, and on different industries and different classes of firms within industries can be assessed. I do not believe that we can reach a reasonable level of understanding of what has happened in the economy until we do that because only in a situation of relative certainty can appropriate policy measures to mitigate against adverse impacts be taken. Thank you, Mr. Chairman.

Representative HAMILTON. Thank you, Ms. Schwartz.

[The prepared statement of Ms. Schwartz follows:]

PREPARED STATEMENT OF GAIL GARFIELD SCHWARTZ

Defense procurement authorizations for FY 1982 exceed $40 billion. Spending will be diffused among some 92 industries producing for defense. Most of the expenditure will be for aircraft, missiles, ships, ammunition, and communications equipment.

Recent trends and current indicators suggest that defense procurement in this and subsequent years, when it is projected to increase sharply to some $79 billion in 1986, will put severe strains on the domestic economy. Many of the benefits presumed to accrue from defense spending may not materialize. The firms that are most likely to suffer from the strains and to miss out on the benefits are small businesses.

The Role of Small Business in Defense Production

Small businesses of fewer than 500 employees receive an estimated 20 percent of DOD prime contract awards. Firms of this size comprise about one fourth of all firms producing for the Defense Department. But there is presently no overall estimate of the value of defense related procurement from small subcontractors. In a study we are completing in New York City, we found that over 55% of the firms producing for defense are subcontractors. Subcontractors in the second through fifth tiers of defense procurement are small businesses. Our conservative "working estimate" is that small business contributes at least $15 billion to the $40.3 billion procurement program.

But small firms are more important in the defense production chain than the mere volume of their contribution might suggest.

SIC CODE	INDUSTRY GROUP (SECTOR)	VALUE OF 1978 SHIP-MENTS TO DOD (millions $)	PROPORTION OF ESTABLISHMENTS WITH FEWER THAN 500 EMPLOYEES*	PROPORTION OF ESTABLISHMENTS WITH FEWER THAN 100 EMPLOYEES*
28	Chemicals and Allied	223.7	97	87
29	Petroleum and Coal	1,585.5	96	87
30	Rubber and Plastic	193.1	98	88
33	Primary Metals	413.9	95	78
34	Fabricated Metal	1,878.1	99	91
35	Machinery, Except Electrical	1,880.7	98	93
36	Electrical and Electronic	9,289.4	95	82
37	Transportation Equipment	22,148.2	94	83
38	Instruments and Related	1,366.9	97	87
88	Miscellaneous	341.2	NA	NA
ALL INDUSTRIES		39,332.8	97**	87**

Sources: U.S. Department of Commerce, Current Industrial Reports, 1978 Shipments to Federal Government Agencies.
County Business Patterns, 1978.

* SMSA Data

**Median

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They often produce the pivotal, crucial elements of systems--elements which, though needed in small quantities, cause whole systems to fail or to be delayed. To recall an old adage, for want of a nail the shoe was lost; for want of a shoe the horse was lost...for want of a horse the army was lost. It is no different in the age of automated weaponry. Wars may be lost if small firms can't produce the right product of the right quality at the right price, on schedule.

Of the nine major industry groups producing for defense, 97 percent of the establishments meet the Department of Defense criterion of small business, having fewer than 500 employees. If a stricter measure of smallness is applied, 87 percent of the establishments have fewer than 100 employees.*

Important Characteristics of Small Business

If small businesses are to fulfill their traditional rôle in defense production, they have to be able to respond rapidly to increased demand occasioned by defense buildup. But most small businesses operate at full capacity, or near full capacity, and this is particularly the case in the machinery and electronic industries. These industries provide an estimated 28 percent of shipments to the DOD. While the national capacity utilization index is around 76, capacity utilization in these industries -- which are characterized by many small companies as well as a few giants -- is 87, sometimes higher. Thus in order to respond to a surge in defense spending, small firms must expand capacity.

*Data refer to establishments, because data on firms are not available. They are being prepared by Garfield Schwartz Associates and should be available in January, 1982.

Expanding capacity requires one or more of the following:

purchase of new equipment
expansion of existing plant
relocation to larger quarters
hiring of new workers

Items one, two and three require capital. Item four requires capital and often a long and expensive training period. Both are burdens to small firms.

Most small firms are companies or closely held corporations. They rely heavily on debt financing. Often their sales volume is insufficient to attract venture capitalists and their ability to raise equity capital is very limited. Thus, if they have to expand plant, or purchase new equipment, they must borrow. 21 percent interest on collateralized loans is a fair estimate of currently available terms. If a business were to purchase a $175,000 machine -- not an expensive piece of equipment -- the interest payments would be $38,500 per year, or about the equivalent of the average earnings of a successful self-employed machinist.

Even if small firms are willing to extend their financial liability to increase output, they face the problems of finding and hiring skilled labor. In both electronics and machinery there is an acute shortage of skilled labor in many regions of the country. At a recent meeting of the Maryland Association of Die Makers and Precision Machinists, the labor shortage was the major concern of almost every attendee. The Department of Labor estimated -- conservatively, since it did not anticipate the defense procurement surge -- that there would be a demand for 660,000 workers in the non-electrical machinery sector between 1978 and 1990. Of these, 170,000 jobs would be for craft workers and professional and technical workers. The pipelines in the educational and vocational educational systems are not able to feed that many trainees into the apprentice systems. Bright and talented youngsters are not going into these occupations in sufficient numbers. Many of those who are interested in the occupations do not have the increasingly sophisticated basic skills needed to make a good apprentice--especially math and an understanding of computer programming. Since modern machinery is highly sophisticated, much of it automated and multi-functional, old fashioned manual dexterity is a grossly insufficient attribute to offer a prospective employer.

While labor shortages naturally affect all firms, they affect small firms more than large ones. Small firms usually cannot offer the wage - and - fringe benefit packages that large firms do. Many small firms complain that they provide the on-the-job training, after which their personnel is pirated away by larger firms offering more attractions, more pay, and more security. (The other side of this picture is, of course, that small firms resist unions, usually with considerable success; unionization would be one possible avenue to parity between large and small firms, but it would not necessarily produce parity.)

State of Our Knowledge

That these problems exist is only beginning to be recognized. A series of hearings by the House Armed Services Subcommittee recorded much anecdotal information about the role of small business in defense production. The increasing dependence of larger contractors and subcontractors on overseas suppliers, especially Japanese and German suppliers, was noted, with its obvious detrimental implications in times of crisis. In recent weeks the Secretary of Defense has been discussing defense production requirements with firms in Europe, in the evident anticipation that the U.S. economy cannot meet defense needs.

These are ominous signs and suggest that a much more thorough and systemmatic review of the problem is required. Clearly it is not in the national interest for the United States to be deliberately exporting its defense-related jobs. It is not good for the jobless; it is not good for entrepreneurs; it is not good for morale, and it is not good for the defense posture of the U.S. to admit that we cannot gear up to meet our self-defined program. What if there were an imminent military crisis? Our enemies will have a virtual guarantee that the U.S. could not respond as it always has done in the past.

We have begun a research program designed to answer some of the unanswered questions. We have completed two studies of defense production by small firms in Maryland and in New York City, and we have underway a major study under a grant from the Small Business Administration, Findings from the research we have completed are interesting and instructive:

. In New York City, only 5 of the firms in the six (machinery and electronics) industries surveyed had more than 100 employees. In Maryland, all of the firms surveyed had 25 employees or fewer.

. In both instances, over half of the respondents produce for defense. In New York City, nearly 60 percent of the respondents are in the defense market.

. In both cases, a substantial proportion of the firms that are not defense subcontractors, would like to be (Maryland 19%; New York 36%).

. New York City firms have a large proportion of their output in defense-related production. Over one fifth (22.5%) of the firms had 75% or more of their output in defense production.

. The New York industry with the greatest output in defense-related production is communications equipment; all six respondent firms in that industry which produce for defense, produce at least 50% of their output for defense.

. In both of our studies, we found that the shortage of labor and the high price of capital inhibited firms from expanding their defense production, and particularly, inhibited firms from entering the defense market. In New York City, over 38% of the survey respondents indicated they were interested in financial assistance to enter or expand defense production.

Our SBA study will determine the proportion and level of total employment in the small firms in defense industries; the proportion and level of value of shipments in the defense oriented industries produced by small firms; and whether small firms' position within the defense oriented industries has changed in recent years.

Inflation

To the degree that output in the 92 defense-related industries expands faster than normal, and demand for production factors correspondingly rises faster than normal, inflationary pressures will result. The actual rate of price increases will vary by industry and by production factor.

In several of the key industries involved in procurement, the immediate effects of defense procurement may be manageable. Annual average real output increased 2.89 percent between 1968 and 1978. In chemicals, petroleum, rubber and plastics and electronic equipment it was close to 4%; and in communications real output increased 8% annually. 1980 capacity utilization rates in these industries were 83%, 88%, 77%, and 82% respectively. But in machinery, capacity was 91%--substantially higher than the 87% or so with which businesses are comfortable.

Capacity utilization in manufacturing firms with assets under $10 million was lower, on average, than for larger firms, which suggests that small firms might not be the source of inflationary pressures. But small firms would be the victims of such pressures, both in terms of higher capital costs (large firms can borrow at lower rates, as well as sell equities) and higher labor costs.

Data on the backlog of orders for defense procurement as we entered the new fiscal year have not yet been published. The most recent data available show a backlog in U.S. government purchases of aircraft and parts of $36 billion. It is difficult to come to any conclusion other than this: if the government spends what it authorizes, or a substantial fraction of it, Administration target reduced inflation rates will not be achieved [9.7% in 1982; 5% in 1986].

If these inflation rates are exceeded, the impact on defense procurement may be one or both of the following; delay in purchasing, or reduction in amounts purchased. If neither of these responses occur, either the budget will be further unbalanced; much greater cuts in non-defense spending will be required; or revenues will have to be increased.

Small businesses are most likely to be squeezed by inflation and will thus be unable to meet the demands of defense buildup.

In that event, larger firms may choose to make rather than buy, but this may create diseconomies of small scale. More purchases may be made overseas, but this will add to an already alarming level of imports of critical products, especially machinery and electronic components; it will do nothing to solve our high unemployment rate; and it will cause a drain on the balance of payments.

Implications for Public Policy

The problem the United States faces with respect to defense procurement illustrates the difficulties inherent in an economic policy that purports to deal only with "supply side" issues but is, of course, implemented in a demand-driven world. Production factors go to the highest bidders, who, in the larger national interest, "should" get those factors? For example, if wildcatting or cattlefeeding or even genetechnology is attracting capital while the producers of prosaic parts for airplanes or tanks are starved for capital, the "free market" allocation of capital may be very detrimental to long-run national concerns.

In theory, assured multi-year defense contracts would enable many firms to obtain both the capital and labor they need to meet defense contractual obligations. In practice, there is ample evidence that this will not be the case for small firms. Thus, two suggestions come to mind:

1. It is appropriate to consider means of diverting investment to small firms in vital industries. Mechanisms for doing so include subsidized below-market interest rates; small business debentures; defense-contract-related loans at subsidized rates; extra federal tax benefits for equity investments in small defense-related firms.
2. It is appropriate to consider a crash program to train workers in labor-scarce occupations and to prepare youngsters now in

school to enter these occupations. There is ample precedent for such a program, most recently in the post-Sputnik National Defense Education Act. A contemporary national defense training program should concentrate on skills needed by the industries that produce for defense, and by the military. Small firms would provide ideal training grounds but they would probably need financial assistance in such matters as insuring equipment used by trainees.

Presumably the United States' defense budget reflects a real need for weapons and personnel. The defense budget should not be used as a monkey wrench to tinker with the budget deficit. The defense capital budget should be established on five and ten-year budget cycles. Once annual outlays are affirmed on the basis of the long-term budget, the impact of those outlays on inflation, on the labor force, and on different industries and different classes of firms within industries can be assessed. Only then, and in a situation of relative certainty, can appropriate policy measures to mitigate against adverse impacts be taken.

Representative HAMILTON. Mr. Wenglowski, please proceed as you wish.

STATEMENT OF GARY M. WENGLOWSKI, PARTNER AND DIRECTOR OF ECONOMIC RESEARCH, GOLDMAN, SACHS & CO., PHILADELPHIA, PA.

Mr. WENGLOWSKI. Thank you, Mr. Chairman.

I welcome the opportunity to discuss our research on the magnitude of the proposed defense buildup in relation to the overall economy as well as specific industries, and I'd like my prepared statement, which I will now summarize, to be placed in the hearing record.

Representative HAMILTON. Without objection.

Mr. WENGLOWSKI. As pointed out in earlier testimony before this subcommittee, aside from the problem of industrial bottlenecks, the impact of rising defense expenditures on inflation will depend primarily on the fiscal and monetary policies accompanying the buildup. I would agree with that conclusion in principle. However, I also believe that current administration policies place too much emphasis on monetary restraint and not enough on demonstrating a credible, declining pattern in the Federal budget deficit.

Reduced monetary expansion is a necessary condition for lower inflation. Monetary policy, however, is not determined or executed in a vacuum. A large and rising budget deficit undercuts the ability to persistently follow a restrained monetary policy in at least two ways. First, the larger the Federal deficit, the higher the level of interest rates required to meet a given target for monetary expansion. The financial risks associated with extremely high interest rates for a long period of time could in the end force the Federal Reserve to compromise on its monetary growth targets and on its anti-inflation policy. So in that regard I think we have a somewhat unsustainable policy mix.

Second, and somewhat more indirectly but perhaps more importantly, a large budget deficit reflects an inability on the part of the administration and the electorate—I would include us all—to make tradeoffs and set priorities among the competing needs of the various groups in our society. If this means that there is insufficient political support for the tradeoffs and sacrifices needed to reduce inflation, monetary policy is likely to ultimately be compromised by lack of political support as well.

Turning to the issue of defense, as a citizen with no more information on the world situation than can be read in the newspaper, I believe that a substantial increase in defense is necessary in an increasingly hostile world. As an economist, I believe we must be prepared to trade off or give up something in order to accommodate the defense increase. We have already traded off significant parts of many nondefense programs. The continued rising budget deficit projections, however, suggest that is not enough. In retrospect, it appears that the time to give extensive tax reductions was not when we were embarking on a major defense buildup. So-called revenue enhancement or supply side tax increases are probably necessary for an appropriately balanced fiscal and monetary policy in the face of the prospective defense buildup.

Let me now turn to our analysis of the magnitude of the proposed defense increases which is shown in the chart [indicating] by the blank line relating total defense outlays as a percent of GNP. As you can see from that chart, it looks relatively benign. The increase in total defense spending as a percentage of GNP projected between now and 1986 under the administration's proposal is only about 2 percentage points from a little over 5 to around 7 percent, and that's about equal to the increase during Vietnam but over a much more protracted period of time, and the ending level of defense outlays as a percentage of GNP is obviously much lower than it was during Vietnam.

However, I think a better way of looking at the increase in defense relative to the economy is to focus on expenditures on equipment and material in the defense budget; that is, total defense expenditures, excluding personnel costs. These are a measure of the inflationary pressure since the projected defense buildup is concentrated in that segment of the economy and on industrial capacity needed to produce defense goods.

In addition, I think I would also point out that defense expenditures, excluding active personnel costs and retirement pay currently account for 69 percent of the military budget. The projected outlays for defense equipment and materials are more properly related to the goods producing segment of the economy, that is, GNP excluding services. The relationship of real nonpersonnel defense outlays to real GNP excluding services is presented in the bottom of table 1 and by the dashed line in chart 1 of my prepared statement. And when you do that, the picture that emerges is the red line on the chart that is before the subcommittee [indicating], and that shows that when you look at nonpersonnel defense outlays as a percent of GNP the prospective increase between 1979 and 1986 is about 5 percentage points. The rate of increase which may be a better measure of inflationary pressure is slightly less than the very steep rate of increase during Vietnam, but not dramatically less. They are of the same order of magnitude and, interestingly, the peak of nonpersonnel outlays as a percentage of GNP excluding services in 1986 is equivalent to the peak in the Vietnam period or about 10 percent.

That means at the end of the buildup in 1986 about 10 percent of all the goods produced in the economy would be going to the defense sector. I would point out that we have worked in the latest changes in the proposed defense program of the administration and they do not really significantly change these conclusions. For example, the 1984 figure on that chart is 8 percent for nonpersonnel defense outlays as percentage of GNP excluding services. If you work in the latest proposal changes, the number would be 7.8 percent. So it really is not significant.

The Reagan defense program is, however, unlike Vietnam in some important ways. There is a substantial difference between the need to produce arms and pay soldiers to fight a hot war and a peacetime effort to boost defense capabilities. If the rise in defense spending turns out to be a major problem, it could presumably be stretched out in order to reduce the inflationary impact, a choice not available during Vietnam. Nevertheless, it does seem likely that there would be some inflationary pressure from a buildup of the magnitude of 14 percent real growth in defense hardware spending per year, sustained for several years.

A more precise analysis of the relative size of the planned defense buildup would consider the effects on specific industries. Here I would just like to make a distinction between the concept of bottlenecks and the concept of the slope of the supply curve.

I think we tend to focus too much on bottlenecks as a physical limit, that you just don't have the capacity to increase production, whereas the real problem is the slope of the supply curve or the increment in price that is necessary to achieve increased output. Practically, that is a more important consideration.

I think recent developments in the past 10 years suggest that the supply curve in many industries is probably fairly sharply sloping in an upward direction and the point that I would make in this regard is that there have been major changes in the relative cost of production—the sharp rise in energy prices and the very sharp increase in interest rates.

As pointed out in earlier testimony, most of the capital equipment in the defense industries is very old. It's been around for a long period of time. Therefore, one would expect that using it to produce increments in output, given current relative prices, would imply a significant increase in costs as output was increased. That factor would occur well before any type of physical bottlenecks prohibiting an increase in output would be approached.

In terms of the effect on specific industries, I would quickly go over the work that Alice Rivlin commented on because our conclusions are basically the same there in terms of the industries being affected; namely, if you look at industries directly supplying the defense sector, about 64 percent of the output of the ordnance industries goes to defense; 45 percent of aircraft and parts; 26 percent of radio, TV and communications equipment; and about .11 percent of other transportation equipment which are basically ships and railroad equipment.

If you include the industries supplying the intermediate inputs to these defense-producing industries, other important industries emerge as producers of intermediate inputs—manufacturers of electronic components and miscellaneous nonelectric machinery, as shown in table 3 of my prepared statement. The aircraft and communications equipment producers show up again as manufacturers of intermediate inputs since in many cases an industry purchases a substantial amount of its inputs from itself: such as a later stage of processing uses products manufactured at an earlier stage within the same industry. In the electronic components and accessories industry 13 percent of their output is purchased by defense industries; and for aircraft and parts it's 9 percent.

Although the defense equipment producing industries are capital extensive, their capital equipment needs are not as large relative to the size of the capital goods producers as their relative demands on the industries in tables 2 and 3.

However, there is an additional point I'd like to make. The Reagan administration is attempting to stimulate a significant increase in capital spending at the same time defense expenditures are to be accelerated. During the Vietnam buildup, real capital spending grew rapidly in 1966 but declined in 1967 as defense demands grew. Increased business capital spending would place demands on several of the same industries that directly and indirectly supply the defense sector.

For example, if you look at the aircraft industry, about 54 percent of their output goes to defense, but if you add in the amount of their output that goes to private capital spending demands, about 68 percent of their output is affected.

If you look at radio and communications equipment, about 30 percent goes to defense, but if you add in the amount of their output that goes to private capital spending demands, about 60 percent of their output is affected.

In the area of other transportation equipment, about 11 percent goes to defense but about another 47 percent goes to private capital investment. So about 58 percent of that industry would be affected by strong capital goods as well as the defense sector.

In electronic components and accessories, about 13 percent goes to defense, but another 17 percent goes to capital spending.

So another point to consider is that we are simultaneously stimulating an increase in the defense sector as well as an increase in the capital goods sector and both of those areas make claims on a lot of the same resources.

There are two caveats that I would mention regarding these industry impacts. First, the figures that we're using on the percent of industry output linked to defense, and the numbers that other people use as well, probably bias the defense impact downward since defense was near its low point when many of these percentages were calculated. In addition, all this work looks at industries rather broadly and there are certain to be subcategories, such as shipbuilding, within the other transportation category where stresses and strains will be fairly significant.

Of the five industries, the aircraft industry and its suppliers and subcontractors are where bottlenecks and inflationary pressures are most likely. The aircraft industry is currently operating at 80 percent of capacity, compared with a peak rate of 84 percent during the Vietnam period. The large commercial aircraft orders currently on the books will still be filled over the next year or two, while the defense buildup adds demand.

The ordnance industry is at a very low level of production compared with its Vietnam peak. Therefore, even if there has been some decline in capacity over the past 13 years, it could still be adequate in this industry. Communications equipment and electronics have been growth industries over the past decade and, therefore, could have less trouble than more antiquated industries in meeting the new demands from defense. Finally, bottlenecks in shipbuilding are apparently quite significant, considering what the U.S. industry has contracted.

On balance, the industry analysis points to the same conclusion as the macroeconomic approach—the projected defense buildup will strain capacity and exert inflationary pressure; while the planned defense program depends on the speed with which the program is pressed forward when bottlenecks become apparent. On a macroeconomic basis, how the program is financed, and what offsets there are in taxes and nondefense spending are important. At the present time we seem to be drifting toward a very adverse policy mix, part of which is a result of defense but not totally—a very adverse policy mix of extremely high deficits and restrictive monetary targets, and I think it's important to correct that mix. Thank you.

Representative HAMILTON. Thank you, Mr. Wenglowski.

[The prepared statement of Mr. Wenglowski follows:]

PREPARED STATEMENT OF GARY M. WENGLOWSKI

I welcome the opportunity to discuss our research on the magnitude of the prospective defense buildup in relation to the overall economy and specific industrials. As pointed out in earlier testimony before this subcommittee, aside from the problem of industrial bottlenecks, the impact of rising defense expenditures on inflation will depend primarily on the fiscal and monetary policies accompanying the buildup. I would agree with that conclusion in principle. However, I believe that current Administration policies place too much emphasis on monetary restraint and not enough on demonstrating a credible, declining pattern in the Federal budget deficit.

Reduced monetary expansion is a necessary condition for lower inflation. Monetary policy, however, is not determined or executed in a vacuum. A large and rising budget deficit undercuts the ability to persistently follow a restrained monetary policy in at least two ways. First, the larger the Federal deficit, the higher the level of interest rates required to meet a given target for monetary expansion. The financial risks associated with extremely high interest rates for a long period of time could in the end force the Federal Reserve to compromise on its monetary growth targets. Second, a large budget deficit reflects an inability on the part of the Administration and the Congress to make tradeoffs and set priorities among the competing needs of the various groups in our society. If this means that there is insufficient political support for the tradeoffs and sacrifices needed to reduce inflation, monetary policy is likely to ultimately be compromised by lack of political support as well.

Turning to the issue of defense, as a citizen with no more information on the world situation than can be read in the newspapers, I believe that a substantial increase in defense is necessary in an increasingly hostile world. As an economist I believe we must be prepared to tradeoff or give up something in order to accommodate the defense increase. We have already traded off significant parts of many non-defense programs. The continued rising budget deficit projections, however, suggest that is not enough. In retrospect, it appears that the time to give extensive tax reductions was not when we were embarking on a major defense buildup. So-called revenue enhancement or supply side tax increases are probably necessary for an appropriately balanced fiscal and monetary policy in the face of the perspective defense buildup. Let me now turn to our analysis of the magnitude of the proposed defense increases.

Conventional Analyses Underestimates Pressures From Defense Building

The rise in defense spending planned by the Reagan Administration is likely to put more inflationary pressure on the economy than many of the conventional analyses have indicated. These studies relate the projected rise in *total* defense spending to total GNP, as shown on the top of Table 1, and by the solid line on Chart 1. Total defense spending as a percent of GNP is slightly smaller in 1986 after the proposed Reagan buildup than it was at the start of Vietnam. The *rise* in the defense share of GNP -- a better barometer of inflationary pressure -- is about 2 percentage points in both cases. However, it occurs over a seven-year period in 1979-1986 rather than only two years during the Vietnam episode. As a result, the average *annual* real growth rate of total defense spending is 7.2% for 1979-1986 versus 19.9% during 1965-1967.

These rather benign conclusions, however, are modified by a more focused measure of the expansion in defense relative to the economy. *Expenditures on equipment and material* in the defense budget (i.e., total defense spending excluding personnel costs) are a better measure of the inflationary pressure since the projected defense buildup is concentrated in that segment of the budget and on industrial capacity needed to produce defense goods. Defense expenditures excluding active personnel costs and retirement pay currently account for 69% of the military budget. The projected outlays for defense equipment and materials are more properly related to the goods producing segment of the economy (i.e., *GNP excluding services*). The relationship of *real nonpersonnel defense outlays to real GNP excluding services* is presented in the bottom of Table 1, and by the dashed line in Chart 1. It is projected to rise by over 5 percentage points over the seven years between 1979 and 1986, compared with 2.7 percentage points during 1965-1967. The average annual rise is still less during 1979-1986 (14.3%) than during Vietnam (19.9%), but the two cases

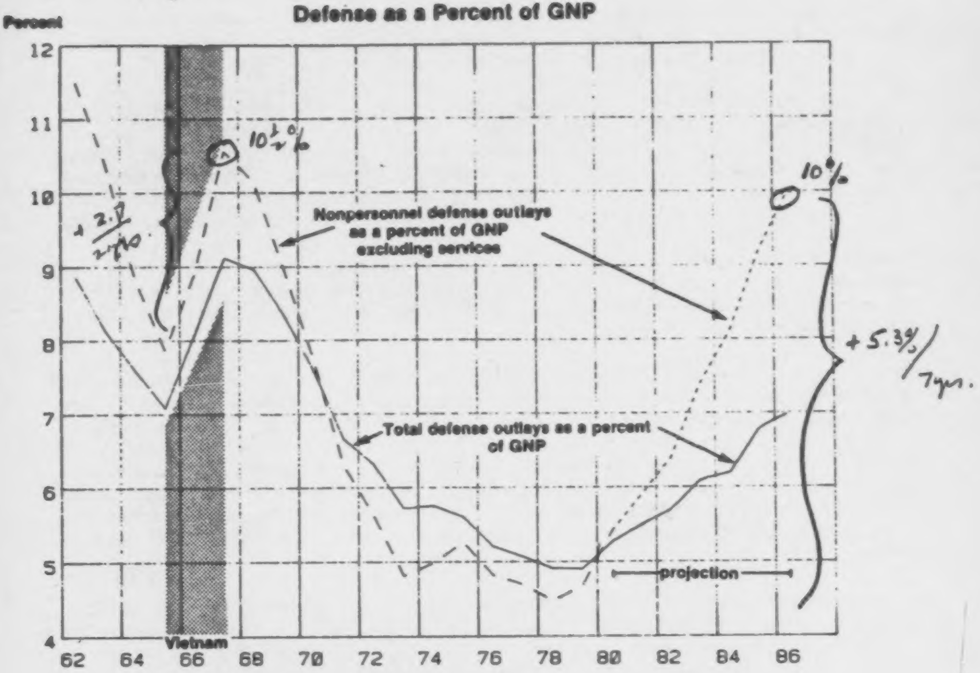
Table 1

Defense Spending — Vietnam versus Reagan Buildup

	Vietnam Buildup			Reagan Program					
	1965	1966	1967	1979	1980	1981	1982	···	1986
Total Military Spending									
Total defense as a % of GNP	7.1%	8.1%	9.1%	4.9%	5.3%	5.5%	5.7%	···	7.0%
Total percentage-point rise	2.0			2.1					
Growth rate per year									
Current dollars	-1.6%	25.9%	23.8%	11.8%	16.9%	19.3%	16.4%	···	12.8%
Constant dollars	-4.4	20.5	19.4	3.8	5.1	8.0	8.5	···	8.1
Avg. annual growth rate									
Current dollars	24.8%			14.3%					
Constant dollars	19.9			7.2					
Total rise									
Current dollars	55.9%			154.4%					
Constant dollars	43.9			62.7					
Military Spending on Equipment and Material (i.e., excluding personnel)									
Nonpersonnel defense spending as a % of real GNP excluding services	7.9%	8.9%	10.6%	4.7%	5.4%	5.9%	6.4%	···	10.0%
Total percentage-point rise	2.7			5.3					
Growth rate per year									
Constant dollars	-4.4%	20.3%	19.6%	6.9%	12.8%	10.3%	12.9%	···	12.3%
Avg. annual growth rate									
Constant dollars	19.9%			14.3%					
Total rise									
Constant dollars	43.9%			155.4%					

Source: Bureau of Economic Analysis, Office of Management and Budget and our estimates.

Chart 1



Defense as a Percent of GNP

Source: Office of Management & Budget, Bureau of Economic Analysis, Goldman Sachs estimates

look more similar in terms of inflationary pressure from this perspective. The total rise in nonpersonnel expenditures over the seven years is more formidable than Vietnam — almost four times the rise in 1965-1967.

Another type of macroeconomic analysis that may help indicate the size of the inflationary effect of the current and projected defense buildup is to simulate econometric models. Such an analysis was performed by several of the major econometric models at the request of the Department of Defense.* The conclusions of this study illustrate the importance of considering the entire fiscal policy stance, not just the defense component of spending. In general, the models indicated that if the rise in military spending were offset by either reduced nonmilitary outlays, rising taxes, or by some combination, then the impact of the defense buildup could add as little as 0.1 percentage point per year to inflation.

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*Symposium on the Impact of Higher Levels of Defense Expenditures on the United States Economy in the 1980's: Summary Report, mimeo, Department of Defense, October 1980.

Two factors are not considered by this study. The first is the heavy concentration of defense spending outside of personnel costs, as discussed above and detailed below, which could result in more severe bottlenecks than the macroeconomic models' structures consider. Second, although nondefense spending cuts are progressing surprisingly well for fiscal year 1982, they do become progressively more difficult as these programs become smaller. Therefore, although the case in which there are "offsets" to rising defense spending is close to what is likely to occur, the magnitude of these offsets may not turn out to be as large as is currently perceived. Thus, the ultimate inflationary impact may be larger than the model simulation results indicate.

The Reagan defense program is unlike Vietnam. There is a substantial difference between the need to produce arms and pay soldiers to fight a hot war and a peacetime effort to boost defense capabilities. If the rise in defense spending turns out to be a major problem, it could presumably be stretched out in order to reduce the inflationary impact, a choice not available during Vietnam. Nevertheless, it does seem likely that there would be some inflationary pressure from a buildup of the magnitude of 14% real growth in defense hardware spending per year, sustained for several years.

A more precise analysis of the relative size of the planned defense buildup would consider the effects on specific industries. Based on the 1972 Input-Output tables, four industries directly sold more than 10% of their output to the defense sector, as shown in Table 2.

Table 2

Industries Directly Supplying the Defense Sector

Industry	% of Industry Output Purchased Directly by Defense in 1972
Ordnance and accessories	64%
Aircraft and parts	45
Radio, TV, and communications equipment	26
Other transportation equipment(a)	11

(a)Ships, railroad equipment, mobile homes, etc.

Source: 1972 Input-Output Table of the U.S. Economy, Bureau of Economic Analysis.

Not surprisingly, the ordnance and aircraft producers appear at the top of the list. Also important direct suppliers to defense, however, are manufacturers of radio, TV, and communications equipment and of "other transportation equipment," which reflects mainly shipbuilding.

When the inputs required by the industries in Table 2 are considered, two additional defense-related industries emerge as producers of intermediate inputs -- manufacturers of electronic components and miscellaneous nonelectric machinery, as shown in Table 3. The aircraft and communications equipment producers show up again as manufacturers of intermediate inputs since in many cases an industry "purchases" a substantial amount of its inputs from itself (i.e., a later stage of processing uses products manufactured at an earlier stage within the same industry.

Table 3

Industries Supplying Intermediate Inputs to Defense Good Producers

Industry	% of Industry Output Purchased by Defense Industries in 1972
Electronic components and accessories	13%
Aircraft and parts	9
Radio, TV, and communications equipment	4
Miscellaneous nonelectrical machinery	4

Source: 1972 Input-Output Table of the U.S. Economy. Bureau of Economic Analysis.

Although the defense equipment producing industries are capital intensive, their capital equipment needs are not as large relative to the size of the capital goods producers as their relative demands on the industries in Tables 2 and 3.

However, this raises a final point to be considered. The Reagan Administration is attempting to stimulate a significant increase in capital spending at the same time defense expenditures are to be accelerated. During the Vietnam buildup, real capital spending grew rapidly in 1966 but declined in 1967 as defense demands grew. Increased business capital spending would place demands on several of the same industries that directly and indirectly supply the defense sector. The portion of industry output going to meet increased demand for business investment goods is added to that going to the defense sector in Table 4 (direct and indirect or intermediate demands are considered and the portions are based on 1972 input-output relationships).

Table 4

Industries Supplying Both Defense and Capital Spending Sectors

Industry	% of Industry Output in 1972
Aircraft and parts	68%
Ordnance and accessories	64
Radio, TV, and communications equipment	60
Other transportation equipment	58
Electronic components and accessories	30

Source: 1972 Input-Output Table of the U.S. Economy, Bureau of Economic Analysis.

The demands placed on the top four "defense-related" industries isolated earlier is greatly increased, and the electronics industry is also affected. Capital goods demand is as important as defense to the producers of radio, TV, and communication equipment and more important to producers of other transportation equipment.

Two caveats regarding the industry impacts listed in the tables should be pointed out. First, using the 1972 figures on the percent of industry output linked to defense spending biases the defense impact on the industries downward, since defense spending was near its lowest point in that year. The portion of output going to defense could significantly exceed the 1972 figures if the projected buildup occurs. Second, the industries are defined rather broadly. There are likely to be certain subcategories of the industries shown, such as shipbuilding within "other transportation equipment," for which defense and capital spending account for larger percentages of output than shown in the tables.

Of the five industries, the aircraft industry and its suppliers and subcontractors are where bottlenecks and inflationary pressures are most likely. The aircraft industry is currently operating at 80% of capacity, compared with a peak rate of 84% during the Vietnam period. The large commercial aircraft orders currently on the books will still be filled over the next year or two, while the defense buildup adds demand.

The ordnance industry is at a very low level of production compared with its Vietnam peak (down about one-third). Therefore, even if there has been some decline in capacity over the past 13 years, it could still be adequate in this industry. Communications equipment and electronics have been growth industries over the past decade and, therefore, could have less trouble than more antiquated industries in meeting the new demands from defense. Finally, bottlenecks in shipbuilding are apparently quite significant, considering that the U.S. industry has contracted.

On balance, the industry analysis points to the same conclusion as the macroeconomic approach — the projected defense buildup will strain capacity and exert inflationary pressure. While the planned defense program has the potential to add to inflation, how much inflation actually develops depends on the speed with which the program is pressed forward when bottlenecks become apparent. On a macroeconomic basis, how the program is financed, and what offsets there are in taxes and nondefense spending are important.

CORRECTION OF A VERY ADVERSE POLICY MIX OF EXTREMELY HIGH DEFICITS AND RESTRICTIVE MONETARY TARGETS

Representative **Hamilton.** Mr. Wenglowski, can you correct that mix by reducing the deficits and loosening the monetary policy?

Mr. **Wenglowski.** I believe that both sides should be focused on. I think that a 5.5-percent upper limit M_{1B} growth target for 1982 probably implies too quick a reduction in inflation to be acceptable from the point of view of the unemployment consequences. I think the 5.5-percent target should be addressed. In order to address that without encouraging inflationary psychology it should be done at the same time that the significantly lower budget deficit than we currently have in prospect is put in place.

Representative **Hamilton.** With the current budget deficit that you and others are projecting—and assuming a continuation of the monetary policy which Mr. Volcker has mentioned, what is going to happen?

Mr. **Wenglowski.** In terms of the deficit prospects?

Representative **Hamilton.** Yes.

Mr. **Wenglowski.** I think that if you look at the Congressional Budget Office's estimate of the deficit as a beginning point, you're talking about numbers in the $60 to $70 billion range with a growth rate in the economy in 1982 that appears to be inconsistent with the monetary targets. If you adjust the growth rate in 1982 to a level that's consistent with the monetary target, you're talking about deficits in excess of $60 to $70 billion, perhaps in the area of $80 billion.

I would like to emphasize that it is a very inexact science what growth rate and nominal economic activity is possible with the given monetary target because velocity, which is the difference between the two, has been very unstable. Velocity can be increased by very high interest rates as it was in 1981. In 1981, we will end up with fourth-quarter to fourth-quarter 2 percent growth in M_{1B}, a very modest growth in M_{1B}, but a growth in nominal economic activity that will be in the range of 7 or 8 percent, a very rapid velocity, but the cost was extremely high interest rates.

What one can say with a high degree of certainty is, in 1982, you cannot have both low interest rates and rapid real economic growth. Either you will be in a recession with low interest rates or you will have strong economic growth with very high interest rates.

PURPOSE AND COMPLETION OF SBA STUDY

Representative **Hamilton.** Ms. Schwartz, on the study you referred to in your prepared statement, I think you said it was financed by the SBA. What is the purpose of that study?

Ms. **Schwartz.** The purpose of that study is to establish data that will enable us to do multiyear analyses of the contribution of small firms to defense production. If I'm giving you too much information, just stop me. What we are going to do is, for the first time, create a file of firms and from that file of firms we will conduct a survey, and on the basis of that survey we will find out to what extent small firms in key industries producing for defense are producing for defense;

why they are not if they are not; whether they would like to if they are not; what proportion of their output is defense related; and what difficulties they experience. So it will give us a snapshot in time of their experience in defense procurement and it will also give a file from which we could do future analysis and trend analysis.

Representative HAMILTON. When is that going to be ready?

Ms. SCHWARTZ. The basic file will be ready in January and the final study will be completed early in April.

Representative HAMILTON. How significant is this shift by the larger defense firms to foreign suppliers?

Ms. SCHWARTZ. Again, Mr. Chairman, the evidence is largely anecdotal. I'm sure that you, as I have done, have waded through the voluminous testimony of the House Armed Services Subcommittee which indicates that——

Representative HAMILTON. I haven't done that, to be perfectly frank with you, Ms. Schwartz.

Ms. SCHWARTZ. Well, you've missed an experience.

Representative HAMILTON. Some of the staff have.

Ms. SCHWARTZ. They conducted hearings around the country and they interviewed many large contractors, especially in the electronics industry, and discovered that a substantial amount of subcontracts were being given out overseas. But there are no strict measures of the magnitude of these contracts and, to the best of my knowledge, I don't believe that anybody is doing a systematic scientific economic analysis of this issue.

BOTTLENECKS IN DEFENSE INDUSTRY

Representative HAMILTON. Do you think there are already bottlenecks in the defense industry?

Ms. SCHWARTZ. Well, to some extent I concur with my colleague here at the table that bottlenecks or choke points, which imply that you can't deliver the goods at all, is not the only problem and perhaps it's not the most severe problem. It is true that the cost of supplying goods has more import. However, again referring to the testimony of the Armed Services Subcommittee, it appears that there are delays that are very substantial in securing many, many elements of defense systems.

CAUSE OF BOTTLENECKS

Representative HAMILTON. Are those delays brought about largely because of problems on the labor supply side or material supply side?

Ms. SCHWARTZ. Well, the delays are occasioned by different factors in different industries for different products. Sometimes they are a result of a shortage of critical raw materials. Sometimes they are a result of bureaucratic mismanagement—delay in issuing bids for subcontracts, and very often they appear to be—and again, the evidence is anecdotal and not systematically gathered—very often they appear to be the consequence of the inability of small firms to deliver on time. I might add that sometimes that inability is deliberate in this sense: A small firm, say, in the machinery industry, operating with 25 people, which is a very common level of employment in that industry, is a very cyclical business and experiences tremendous ups and downs. So it is in the interest of a firm to maintain a backlog of orders if it possibly can so that when the down cycle is imminent, it has a cushion and can start fulfilling that backlog of orders.

SHORTAGE OF SKILLED WORKERS MAJOR SOURCE OF BOTTLENECK PROBLEM

Representative HAMILTON. I have the impression from reading your statement and comparing it to some of the others that you put a little more emphasis on this problem of shortage of skilled workers. Most people mentioned that, but I think your experience leads you to think that that could very well be a major source of the bottleneck problem. Is that correct?

Ms. SCHWARTZ. Yes, it is, Mr. Chairman.

Representative HAMILTON. That's especially a tough one for small business to deal with.

Ms. SCHWARTZ. It's very tough for small business. I think it affects large business as well, but in my research, I've found that large firms are pirating skilled electronic technicians.

Representative HAMILTON. That's already going on, is it?

Ms. SCHWARTZ. It's already going on. Bounties are being paid to retain personnel.

Representative HAMILTON. What's happening on the supply side? Are we getting more skilled workers trained or is the outlook there fairly bleak in the key skills?

Ms. SCHWARTZ. You've got a dual sort of labor market problem here, I think. As Ms. Rivlin suggested earlier, it is true that there are suddenly many more applicants in engineering programs at the undergraduate and the graduate level, so that means maybe in 4 to 8 years, we will have a sudden surge in the supply of highly trained senior management prospects.

There is not a surge at the craft or journeyman level, the highly skilled technicians. Those people traditionally were high school graduates. The high schools in most parts of the country are not training people so when they get out of high school they have the kind of skills that a small business, say, in machinery wants. They don't have good enough math skills. They don't understand the multifunctional digital-controlled machinery that they have which is programed to do many different tasks and, therefore, the pool of apprentices is shrinking both in quantity and in quality, and I have seen in many communities that I've worked in that there is now just developing a local interest in trying to do something about that, and it's largely spurred by the businessmen themselves, but it will take some time and a lot of organization to get such an act together, and I think that it will certainly take some Federal funding.

It disturbs me greatly as a citizen as well as an economist to see a cutback in Federal support for training and education when we face a crisis as we now face.

Representative HAMILTON. One of our previous witnesses, Mr. Gansler, talked about the shortages that already exist in forgings, casting, electrical connectors, semiconductors, precision bearings, and the like. Would you agree that those already exist?

Ms. **Schwartz**. Yes; I think that's true. There is evidence that there are shortages and that the 120-month delays apply to those kinds of items, particularly forgings; I know that's true.

Representative **Hamilton**. And I take it you have the same kind of data problems here that Ms. Rivlin and I discussed?

Ms. **Schwartz**. Yes, I do, and in addition to what Ms. Rivlin highlighted and your questioning brought out, we face another problem, which is, there are now rumors that the existing data are going to be reduced or that, even worse in my view, users will be charged for data. So that the series that comes out in——

Representative **Hamilton**. These data come out of Commerce?

Ms. **Schwartz**. The Department of Commerce primarily and it is very useful, although it's often late. But up until now it has been quarterly and much of it is monthly and it has been in a consistent series so that one could do some general analysis. What has been missing, though, is the interindustry indices.

FIGURES ON INDUSTRY OUTPUT PURCHASED BY DEFENSE IN 1972

Representative **Hamilton**. Mr. Wenglowski, in your prepared statement you use the percentage of industry output in 1972. Are those the best figures available, going back to 1972?

Mr. **Wenglowski**. Mr. Chairman, this is the last data that we have in a full input-output table, but you could put together more recent figures than this but it would not be the format where you could do a complete input-output analysis. I checked these numbers with those Ms. Rivlin was referring to and they do not seem to have changed very much compared to her figures in 1980 as I went through and compared them.

Representative **Hamilton**. I see.

Mr. **Wenglowski**. There are more recent figures, but not in a complete input-output format.

REVENUE ENHANCEMENT

Representative **Hamilton**. You mentioned a tax increase. What kind of tax increase would you recommend? I guess it's a bad word, tax increase. It's revenue enhancement in this age. What kind of revenue enhancement do you think we ought to have?

Mr. **Wenglowski**. Or supply-side tax increase.

Representative **Hamilton**. Or supply-side tax increase.

Mr. **Wenglowski**. It's not the tax increase that I'm after. It is a better balance between fiscal and monetary policy. I think the current imbalance is extremely negative for the prospects of the economy, financial markets, capital investment, and I question how you get out of this box and I'm doubtful that we can do a lot more on the expenditure side enough to get a really credible declining Federal budget deficit. So I think the only option is tax changes.

Representative **Hamilton**. Suppose you stay with the current projections the administration has on the budget.

Mr. **Wenglowski**. You mean the $42.5 billion deficit?

EFFECT OF DEFENSE PROGRAM ON INFLATION USING THE ASSUMPTIONS OF THE ADMINISTRATION AND CBO

Representative **Hamilton**. No. What I want to do is try to get your idea of how the defense program is going to affect inflation if you make the assumptions that are now being made by the administration or the Congressional Budget Office. Have you thought through that at all?

Mr. **Wenglowski**. My reaction, Mr. Chairman, would be that for the next 2 years the defense program is really not the major inflationary problem. If you look at the charts and the other work that's been presented, that problem becomes a bigger problem later on. For the next 2 years the real threat—defense is one of the factors that give you the big deficits, but it really wouldn't change dramatically the current imbalance we have on the fiscal and monetary side. My input would be that for the next 2 years the real problem is sort of outside the defense area; that the inflationary effect of defense comes later on.

Representative **Hamilton**. Beginning in 1984?

Mr. **Wenglowski**. 1983–84. You asked what sort of tax increases and I didn't want to evade an answer. I just wanted to put it in context. I'm not for tax increases by and for themselves, but I think it is important to retain some of the supply-side thought process that has gone into the current program. I think there are elements of truth to it. I think it was oversold and not as carefully thought out as it should have been, but there are elements of correctness in it and I think you should retain that at the same time you try to raise revenues. That's why I come up with the term supply-side tax increases.

Specifically, I think it would be a very good idea to cut back on the tax deductibility of consumer interest expense. I think we are one of the very few nations in the world—I realize it's not politically popular, but if you look around the world, with the exception of very few other developed countries—Sweden I think also has unlimited tax deductibility but it's the only other case I know of—we're the only country in the world where you can take a trip to the Caribbean and charge it on Master Charge and get a deduction for all the interest expense. That's a great distortion. It would stimulate savings available for investment and it would raise Treasury revenues. It's a no-lose proposition other than the political consequences.

Another one I would point out is the possibility of a tax on imported oil would be a revenue raiser as well as have some supply-side merit to it in terms of domestic energy allocation.

Two others that I would mention where the inflationary side effects are greater and create a barrier but should be considered would be the value-added tax, which has some supply-side attributes, as well as the area of deregulation of natural gas and windfall profits tax.

Representative **Hamilton**. Let me just say you don't make a politicians' heart jump with joy, Mr. Wenglowski. Those are all tough

Mr. **Wenglowski**. Unfortunately, I'm afraid that fighting inflation and rebuilding defense is going to be tough and that's the major thing that concerns me.

Representative **Hamilton**. Well, maybe I'll have to take you along with me to explain some of those to my constituents.

EFFECT OF THE DEFENSE BUILDUP ON THE RECESSION

Now, what about the recession? How is it going to affect defense buildup? You could argue, could you not, that the defense buildup will actually be helpful in getting us out of the recession?

Mr. **Wenglowski**. Mr. Chairman, my comment there would be that what I'm very concerned about from the point of view of the financial markets as well as inflation in the longer run outlook is that we have a severe recession at the present time and you're correct that the policies to turn a recession around are already in place, at least latently. All you need to do is just slow down the progress or the approach to cutting back Federal spending and you will immediately have an extremely stimulative antirecession Federal budget.

The problem would come after the recession was ended and you would end up with a budget grossly out of balance not only because of the effect of the recession on revenues, which is not a very big concern—that is a concern, but there are offsets to that in the form of lower private sector borrowing, but if the recession were severe enough to derail the attention being given to reducing Government spending to justify the tax cuts we have already legislated, I think one could be very bleak about what the environment would be like in the period quite soon after the recession is over. So I hope that this recession is mild. I think the evidence at the moment suggests it probably is. I don't think we are totally out of the woods on it. I think the consumer sector might react more sharply than we're expecting, but I would not look——

Representative **Hamilton**. More sharply, meaning more strongly?

Mr. **Wenglowski**. More sharply in negative direction. So I would say the recession looks mild but we are not out of the woods of having something more severe than that and I don't look positively at the kind of policy we may end up with in a very sharp recession.

Representative **Hamilton**. Well, I want to thank both of you for your contributions. They are excellent statements and the subcommittee appreciates them very much.

The subcommittee stands in recess.

[Whereupon, at 11:50 a.m., the subcommittee recessed, to reconvene at 10 a.m., Thursday, October 29, 1981.]

THE DEFENSE PROGRAM AND THE ECONOMY

THURSDAY, OCTOBER 29, 1981

Congress of the United States,
Subcommittee on Economic Goals and
Intergovernmental Policy of the
Joint Economic Committee,
Washington, D.C.

The subcommittee met, pursuant to recess, at 10:15 a.m., in room 2247, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the subcommittee) presiding.

Present: Representatives Hamilton and Richmond.

Also present: James K. Galbraith, executive director; Richard F. Kaufman, assistant director-general counsel; and Chris Frenze, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative Hamilton. The subcommittee will come to order. The testimony presented so far in these hearings on the effects of the defense buildup on the economy has emphasized the potential inflationary pressures that could be produced. There seems to be a consensus that the buildup will create a bottleneck—inflation problem, and much concern has been expressed about the consequences for the civilian economy of the shift of resources into the defense industries.

There is a diversity of views about the seriousness of the bottleneck problem. Several witnesses have concluded that bottlenecks already exist in certain sectors of the defense industries and that they will be greatly aggravated by the buildup.

Charles Schultze, former Chairman of the Council of Economic Advisers, testified that the pace of the buildup will create bottlenecks, but that these will have a greater effect on the defense program than on the economy. Murray Weidenbaum, speaking for the administration, said that while there could be problems, the buildup would not cause bottlenecks in the short term, but he is not so sure about the longer term.

Alice Rivlin said that the buildup should not be inflationary over the next 2 years, but that it could become inflationary as the economy moved toward full employment. She said there was no evidence to date of a bottleneck problem, but the data are not good enough to tell what will happen in key sectors of the defense industry.

Just about all of the witnesses commented on the inadequacies of existing information, and I have the impression that there is an unusual degree of uncertainty in assessments of the current availability of resources for defense production, as well as in forecasts.

We will begin this morning by hearing testimony from Lester Thurow, professor of management and economics at the Massachusetts Institute of Technology. Mr. Thurow has been a Rhodes Scholar and staff economist for the President's Council of Economic Advisers. He is a contributing editor of Newsweek and his most recent book is entitled, "Zero Sum Society."

We will then hear from James Capra, senior economist at the Federal Reserve Bank of New York. Mr. Capra was formerly Chief of Budget Projections for the Congressional Budget Office.

Following their testimony, we will hear from the Department of Defense.

Senator Hawkins will be unable to attend the hearing today and I take this opportunity to place the Senator's written opening statement into the hearing record.

[The written opening statement of Senator Hawkins follows:]

WRITTEN OPENING STATEMENT OF HON. PAULA HAWKINS

DEFENSE-RELATED ISSUES MUST BE SEEN IN A LARGER CONTEXT OF WEALTH CREATION AND ECONOMIC GROWTH. AMERICA CANNOT HAVE A STRONG DEFENSE INDUSTRIAL BASE IN THE ABSENCE OF A STRONG ECONOMY.

RESTORATION OF AMERICAN STRENGTH AND INDUSTRIAL CAPABILITY WILL BE A TREMENDOUS JOB; BUT WE HAVE BEGUN THAT JOB, FIRST, BY OPENLY RECOGNIZING THE SEVERITY OF THE PROBLEMS IN THE DEFENSE INDUSTRIAL BASE. AND, SECOND, BY DEVELOPING NEW ECONOMIC POLICIES TO DEAL WITH THE PROBLEM.

FOR EXAMPLE, WE UNDERSTAND THAT THE PRODUCTION LEAD TIMES FOR ESSENTIAL DEFENSE MATERIAL HAVE BEEN INCREASING AND THIS HAS LED TO DELAYS IN PUTTING MODERN EQUIPMENT INTO THE FIELD. (FROM 1977 TO 1980 THE DELIVERY SPAN FOR AIRCRAFT LANDING GEARS GREW FROM 52 TO 120 WEEKS).

EXAMPLES OF THESE SUPPLY SIDE DIFFICULTIES ABOUND. THESE DIFFICULTIES AND POSSIBLE BOTTLENECKS ARE UNFORTUNATE LEGACIES OF NEGLECT CAUSED BY THE PREVIOUS ADMINISTRATION'S CONCENTRATION ON ECONOMIC DEMAND MANAGEMENT POLICIES.

IN ADDITION TO THE DIFFICULTIES CAUSED BY POOR POLICY, OTHER PROBLEMS HAVE BEEN CAUSED BY THE GOVERNMENT ITSELF, THROUGH OUT-DATED CONTRACTING AND PROCUREMENT PRACTICES.

WE NEED TO CLOSELY EXAMINE WHAT GETS PRODUCED FOR OUR DEFENSE DOLLAR. TOO OFTEN THE PRODUCT IS JUST ANOTHER MASSIVE STUDY THAT ATTEMPTS AN IMPOSSIBLE FORECAST IN ORDER TO JUSTIFY ONE OR ANOTHER PROJECT. PAPERWORK REDUCTION WOULD LEAVE MORE RESOURCES AVAILABLE FOR IMPROVING TECHNICAL FACILITIES AND TRAINING.

THE DEFENSE INDUSTRIAL BASE PROBLEM HAS BEEN CAUSED BY NEGLECT AND THE SOLUTION LIES IN NEW ECONOMIC MEASURES COUPLED WITH REFORM OF GOVERNMENT PRACTICES TO BRING MORE COMPETITION INTO THE DEFENSE INDUSTRY.

THE PRESIDENT'S DEFENSE PROGRAM IS AN INTEGRAL PART OF HIS OVERALL ECONOMIC REVITALIZATION STRATEGY. WE HAVE MADE A NEW ECONOMIC BEGINNING. WE MUST NOW MOVE TO INTELLIGENTLY STRENGTHEN THE DEFENSE INDUSTRIAL BASE.

Representative HAMILTON. Mr. Thurow, you may begin, sir. Your prepared statement, of course, will be entered into the hearing record in full. You may read it or summarize it, as you choose.

STATEMENT OF LESTER C. THUROW, PROFESSOR OF MANAGEMENT AND ECONOMICS, MASSACHUSETTS INSTITUTE OF TECHNOLOGY, CAMBRIDGE, MASS.

Mr. THUROW. Let me summarize it so we can have a discussion.

Representative HAMILTON. Right.

Mr. THUROW. If you'll look at the problems of the rising American armament expenditures, the real economic problems are two in number. First, given that a certain amount of resources must be shifted into defense production, what is the best way to accomplish that objective with the least disruption to the civilian economy?

Second, given the methods that are actually going to be used to bring about the necessary transfer of resources, what are the likely effects on the civilian economy?

When you look at these problems, the two most recent military buildups are good examples of the right way to have a military buildup and the wrong way to have a military buildup. We did it the right way in the Korean war and we did it the wrong way in the Vietnam war.

If you look at what we did in the Korean war, we basically had a very large tax increase and then we imposed a full range of World War II wartime controls. When the buildup didn't prove to strain the economy as much as people first forecast, we cut back on both the tax increases and the controls, and we sailed through the Korean war with relatively little economic difficulty.

Now in the Vietnam war, we did it precisely the opposite. We did not raise taxes until well into the war and we did not use the full range of controls that you usually use in military buildups and, in some sense, the Vietnam war led to our current economic problems.

As I read the prepared statement of Murray Weidenbaum, he said that the bad effects of a military buildup could easily be controlled by monetary policies, monetarism.

I think there are two things to note about that. Monetarism controls the bad effects of rising military spending with very high interest rates and it is not at all obvious that the American economy will survive those high interest rates. That should be put in opposition to what we did in World War II and in the Korean war.

In both of those periods of time, there was an agreement between the Fed and the Treasury that the Fed would hold interest rates at 1 percent and various rationing devices would allocate credit across the economy.

If Murray Weidenbaum is right about the way to handle this situation now, you have to conclude that people were 100 percent wrong in both World War II and the Korean war. Let me suggest to you that in a military buildup, tight monetary policies are not the way to control the adverse effects. Those tight monetary policies may control the adverse effects of the military buildup, but they themselves have a whole series of adverse effects and it's not obvious that you aren't worse off with those effects than with the original effects from the military buildup.

I think there are three problems from this military buildup. First, it is likely to severely weaken American high technology civilian industries as materials, equipment and skilled personnel are moved from civilian to military pursuits. Two, it is likely to produce shortages of materials, equipment and skilled personnel that will create bottleneck inflation in the sectors where the shortages occur. And three, it is likely that it will stimulate some general excess demand inflation in the rest of the economy unless it is combatted with very high interest rates.

Although the GNP is now falling slightly, it is a peculiar recession in the sense that it is a mixture of regions of the country—let's say Buffalo to Gary, Ind.—they are in some sense in the middle of the Great Depression and other regions of the country that are booming—Boston, Houston, and Los Angeles.

The basic problem is that if you look at what the military is proposing to buy, it is bought in the booming parts of the economy rather than in the depressed parts of the economy. Therefore, it is likely to create severe problems, both in terms of bottlenecks and in terms of weakening our civilian firms that are going to have to compete against foreign competitors.

In competing with foreign competitors there is a difference between this military buildup and the previous military buildups. In both Korea and Vietnam, we had a military buildup while our allies had much less of a military buildup and nothing dramatic happened in terms of hurting the civilian economy, but there was a reason.

At that period of time, we had technological superiority over everybody in almost everything and you could weaken civilian high technology firms and they could still compete in international markets. We're now in a world where America's civilian high technology firms are just one competitor among equals. In that kind of a world, I think the negative effect by having to compete with the military for skilled personnel, is going to have a very bad effect on some high technology American industries. Ask yourself whether we're going to be able to compete in world markets, given that American computer firms are going to be losing materials, equipment, and engineers, while their equivalent competitors in Germany and Japan are not going to be losing equipment, material, and personnel.

When you look at bottleneck inflation, how much is this going to spread into the rest of the economy and how virulent is it going to be?

If you look at the Vietnam war period, bottleneck inflation caused a little bit more than 1 point of extra inflation. When you added 1 point of inflation to a point and a half of inflation, that sounds like quite a bit. When you add 1 point to a 10-percent rate of inflation, that doesn't sound like so much.

But I think that there is every reason to believe that the bottleneck inflation this time will be bigger for essentially three reasons. First, the buildup is more heavily focused in procurement as opposed to a spread across the board in food. clothing. transportation, and other things that come from the general economy. Second, the economy has become much more inflationary prone because it has experienced a period of high inflation. A bottleneck which back in 1966 caused 1 percentage point worth of inflation, in 1982 would cause a lot more than 1 percentage point worth of inflation simply because the system has become more sensitive to inflationary pressures over the last 15 years.

Third, when the Vietnam buildup occurred, American productivity was growing at 3 percent a year. American productivity is now falling at three-tenths of a percentage point a year. That means that these stresses and strains are going to be more acute than if we had basically a healthy economy.

Now what I would really like to focus on, however, is not what are the adverse effects going to be, but how do we mitigate these adverse effects.

The most likely problem is a problem of weakened civilian industries. The second most likely problem is the problem of bottleneck inflation. And the third most likely is this problem of generalized inflation. But the third problem is, in some sense, easiest to handle.

If you really want a big military buildup, the appropriate way to handle it is the way we handled it in Korea or any other time. You have a big tax increase to go with it. I think that becomes doubly a necessity if you look at the amount of revenue that you gentlemen gave away in your tax cuts in July. I don't know how you can add up the budget numbers and not come to the conclusion that sometime within the next year, given military spending, the tax cuts, and the amount of spending cuts that have occurred in the civilian budget, there just has to be a large tax increase at some time if we're not to get into trouble.

Representative HAMILTON. You might want to say "some of you gentlemen," Mr. Thurow.

Mr. THUROW. Yes. [Laughter.]

When you think of raising taxes, I would suggest to you, given that we do have this terrible problem of competition with people around the world, that we just have to push the American system toward more savings and investment. If Americans save 5 percent of their income and Germans save 14 percent and the Japanese save 21 percent, we're just not going to compete. That's the simple fact of life. Therefore, the tax cuts should basically be focused on tax increases on consumption, hopefully progressive consumption taxes designed to push the economy toward more savings and investment at the same time you offset the higher military spending.

The first two problems, however—the weakened civilian high technology firms and the bottleneck inflation—are harder to solve. The easiest way to solve them would be to simply spread out the buildup over a longer period of time so that you don't create so many of these bottlenecks and that you give people time to eliminate the bottlenecks before they occur.

However, if you don't think that's possible—and I want to emphasize that you can't decide how much military spending is necessary from an economic perspective—it seems to me that you want to think seriously about reimposing some of the controls that were used during the Korean war to move materiel and manpower from the civilian to the military industries in such a way that the military gets what it needs, but you don't end up destroying the civilian industries while you do it.

Markets are good for some things. But this business of essentially bidding resources away from civilian high technology firms by offering to pay higher wages and higher prices in order to move them into military firms, I think is going to get us in a lot of trouble. If you are an engineer thinking about making that move, knowing that military procurement is heavily cyclical, you will demand a large risk premium to move. When you move and get that large risk premium, you essentially raise the wages of engineers and skilled manpower very dramatically.

In past military buildups, we have always paid a lot of attention to increasing the supply of skilled labor. We have such things in our history as the National Defense Education Act. During World War II, we did many innovative things in order to train people faster to be tool and die makers, engineering skills, and machinist skills. One of the peculiar things about this buildup, and it's especially peculiar, I think, given a supply side administration, that none of the manpower programs that might help alleviate these skilled labor bottlenecks have been suggested. Somehow, the assumption is that these skilled workers are going to come out of the woodwork without any positive programs designed to generate them.

In the past, we have always found it necessary to have a set of labor supply programs on the Government side going along with a military buildup. That occurred in World War II. That occurred in the Korean war and even, to some extent, in the Vietnam war.

I think that's going to be one of the things that's terribly critical. You can see the problem at the moment. Many high schools are finding it impossible to teach science courses, because the science teachers can get better jobs in either the civilian or military area. But if you don't have teachers in high school teaching science courses, you then don't have a potential pool of trained manpower that can become technical workers and scientific workers later on. That problem in the high schools is now moving into the colleges, where a lot of colleges are finding it impossible to hang on to scientific manpower as teachers because the teachers can make so much more money in the civilian or military sector.

And there again, when the colleges go out of the business of teaching science courses because they don't have any science teachers, you weaken yourself in the long run.

You ought to address yourself to some labor supply programs that might help cure some of these problems which are endemic in the economy anyway.

We've got a shortage of electrical engineers in the American economy right now, before this buildup even starts. Military procurement basically demands electrical engineering skills. It's just not at all obvious where these electrical engineers are going to come from to meet that demand over the next 4 or 5 years.

Thank you.

Representative HAMILTON. Thank you, Mr. Thurow.

[The prepared statement of Mr. Thurow follows:]

PREPARED STATEMENT OF LESTER C. THUROW

THE ECONOMICS OF RISING AMERICAN ARMAMENT EXPENDITURES

Economics cannot be used to determine whether military expenditures should rise or fall. That determination must be based upon an analysis of the foreign threats faced by a country and the appropriate responses, military and diplomatic, to them.

Economics does set an outer limit on the resources that can be devoted to armaments. It is not possible to have more military goods than the economy's productive capacity allows. But that limit is so far above what anyone is now contemplating that it is really not germane to the present discussion. At the peak of World War II the United States was devoting 42 percent of its GNP to defense and could undoubtedly have gone much higher if it had been necessary.

The real economic problems are two in number. First, given that a certain amount of resources must be shifted into defense production what is the best way to accomplish that objective with the least disruption to the civilian economy? Second, given the methods that are actually going to be used to bring about the necessary transfer of resources, what are the likely effects on the civilian economy?

The Reagan military build-up presents problems for the American economy both because it is very large and because it is being imposed on the economy in a less than optimal manner. Some of the adverse consequences are unavoidable, but many of them are avoidable.

THE RIGHT WAY TO ACCELERATE MILITARY SPENDING

Since World War II the United States has engaged in two major military build-ups -- the Korean War and the Viet Nam War. From the perspective of economics the Korean War was a model of the right way to carry out a military build-up and the Viet Nam War was a model of the wrong way to carry out a military build-up.

The economic problem is to quickly transfer a substantial amount of the country's productive capacity to military production with a minimal disruption of the remaining civilian production.

During the Korean War America raised taxes dramatically at the beginning of the war and imposed a full range of wartime controls -- wage and price, investment, labor, and materials. Taxes were used to lower consumption, make room economically for military production, and stop excess demand inflation. Controls were used to shift materials, labor, and capital to military production without severely damaging the civilian economy and to prevent bottleneck (supply-side) inflation from breaking out.

THE WRONG WAY TO ACCELERATE MILITARY SPENDING

President Johnson is rightly remembered for misfinancing the Viet Nam War. He wanted guns and butter, where the butter was his Great Society social welfare programs. President Reagan is making the same mistake. He also wants guns and butter. The only difference is that his butter is very large tax cuts that are designed to stimulate savings and investment.

When the President's budget is fully implemented in 1986 he is proposing to cut taxes by $620 billion (a 30 percent tax cut), raise military spending by $181 billion, and cut civilian social welfare expenditures by $120 billion.

The Reagan economists point to their civilian budget cuts to differentiate themselves from the Johnson administration, but the civilian budget cuts are simply not large enough to do the job. A $120 budget cut ($40 billion of which is as yet unspecified and unlikely to occur) does not counterbalance both a $260 billion tax cut and a $181 billion rise in military spending. Instead of calling for a tax cut the President should have been calling for a tax increase -- especially if you believe that the President is allocating too much of the economic burden on low income groups as I do.

The United States is now exporting high interest rates to the rest of the world because no one can put the President's budget arithmetic together with his proposal to cut the rate of growth of the money supply in half between 1980 and the end of 1985 and come up with anything other than high interest rates. If demands for credit expand because of tax cuts and military spending while supplies of credit contract due to monetary policies, interest rates must rise. It is unfair to say that military spending is causing the high interest rates. Combined with the right economic policies military spending would not have to lead to high interest rates. But it is fair to say that the Reagan economic program would not be producing high interest rates if it were not for the $180 billion in fiscal stimulus caused by the defense budget proposals.

These high interest rates are having negative effects on the United States -- the American GNP is now falling -- but they will have even greater negative effects in Europe. In the United States high interest rates have been pressing down upon economic activity but the large tax cuts and increases in defense spending are just now starting to to stimulate economic activity and counterbalance the high interest rates. Europe in contrast will have the depressing effect of the high interest rates without the offsetting stimulus.

ECONOMIC RESULTS

Ranked in accordance of their probability the Reagan proposals are likely to (1) severely weaken American's high-technology civilian industries as materials, equipment and skilled personnel are moved from civilian to military pursuits, (2) produce shortages of materials, equipment and skilled personnel that will create 'bottleneck' inflation in the sectors where the shortages occur, and (3) stimulate general excess demand inflation in the rest of the economy just as it did during the Vietnam War.

In the debates that have occurred over the economics of the Reagan defense budget the first two points are widely accepted while the third is controversial. On the first two points only the size of the effects is at issue.

While the American economy has essentially stagnated for the last three years (real growth has averaged 0.5 percent per year), the stagnation is a peculiar mixture of boom and depression. Certain geographic areas (Texas, California, Florida, Massachusetts) and industries (semi-conductors, computers) are booming while other regions (the industrial mid-west) and industries (steel, autos) are in the midst of something that looks like the Great Depression. As a result there is lots of generalized idle capacity (both workers and equipment) but it is concentrated in a few regions and industries. Unfortunately the industries and regions are not those where military equipment is now purchased.

Military equipment is produced by the industries and regions that are now experiencing booming production and shortages of materials, equipment, and manpower. Modern military procurement is almost synonymous with electronics and computers — a booming industry. Unfortunately the engineers, machinists, and tool and die makers needed to expand military production are already fully utilized in the civilian computer and electronics industries. These industries are already straining their productive capacities. Since it takes several years to significantly increase the supply of such skilled people, any military build-up must of necessity take a signficant amount of its manpower from existing civilian industries.

The need to weaken firms producing civilian goods to stengthen firms producing military goods is unavoidable, but that result is particularly adverse to the United States at the present time. Normally a U.S. military build-up would be occurring in a world where our military allies were having similar build-ups. Thus America's civilian high technology firms might be weakened absolutely but they would not be weakened relative to their competition in other countries that are our military allies but economic adversaries. Competitive firms in other countries would be having the same drain on their productive capacities.

But the U.S. is at the moment alone among the western allies in having a major military build-up. This creates a major economic problem in the U.S. Its high technology industries will be facing problems not faced by their competitors.

At the time of the Korean and Vietnam Wars, there was a similar asymmetric nature to the military build-up, but it occurred in a different context. Then U.S. industries were indisputably the technological leaders in almost everything. They could be weakened with military procurement, but still more than hold their own in world markets. But high technology civilian firms are now fighting to hold their positions in a world filled with technological equal competitors -- particularly the Japanese. Thus a price that we could easily afford to pay in the 1950s and 1960s has become very difficult to pay in the 1980s.

Logically there are only three options for the United States. (1) Simply accept the fact that civilian high technology industries will lose some of their world and American markets. (2) Force our military allies but economic competitors to engage in similar military build-up so that their firms face the same conditions as American firms. (3) Slow down the acceleration in military procurement. I would predict that within a relatively short period of time American public opinion will be demanding that the Reagan administration accomplish the second option or accept the third option. This is particular true since much of the build-up is targeted on areas (protecting middle eastern oil supplies) that are of more direct relevance to our allies than they are to us.

Bottleneck inflation is essentially caused by the need to move scarce resources of civilian industries into military industries. Bottleneck inflation arises from two sources. First, as resources flow out of civilian industries civilian production falls. This leads prices to rise in product markets to ration the smaller available supplies among the alternative civilian users. Second, without controls resources will only move if the military industries offer substantially higher wages for labor and offer to pay substantial premiums for equipment and materials. That is simply how a market moves resources from one industry to another. But with the risk associated with the boom and bust cycles in military procurement and the need to move massive amounts of resources rapidly, the economic premiums necessary to move the desired resources are apt to be very large. This raises wages, materials costs, and the prices of intermediate products that are used on both military and civilian applications.

Bottlenecks depend upon how fast resources are being transferred from the civilian to the military economies. A 9.1 percent real rate of growth represents a very rapid transfer of resources. Given the time it takes to train new skilled blue-collar workers and engineers, there is no way that the supply of skills can keep up with this growth rate. To cope crash training programs would have to be implemented, as they were in World War II, but the Reagan administration is doing nothing about 'supply-side economics' when it comes to industrial skills necessary for military production.

The problem of competitive bidding between military and civilian firms for the same resources and the resultant escalation of prices is apt to be accentuated by the President's recent tax cuts. These tax cuts were so large that they for all practical purposes have eliminated the American corporate income tax. By the late 1980s the U.S. government will be collecting very little of its revenue for this source. As a result the civilian high technology firms are going to have very large financial resources that they can use to fight off the materials, equipment, and labor raiding parties sent by the military firms. When military firms offer an engineer $10,000 more to work for them, they are going to find their offers matched by the civilian firms and have to increase their offer even further to get the engineers they need.

All of this is compounded if general industrial wages are indexed to the cost of living as they are in the United States. Bottleneck inflation raises the costs of particular goods and services. This raises the cost of living. Because the cost of living is up industrial wages rise. Because wages are up, prices rise in industries not suffering from military induced shortages. This converts what was an industry specfic inflation into a general inflation of an ever rolling round of price and wage increase following one another.

The economic defenders of the Reagan Administrations defense budget concede that bottlneck inflation will occur, but argue that it will be small. Bottleneck inflation added 1.2 percentage points to the nation's inflation rate in the first two years of the Viet Nam War. Although it is true that 1.2 percentage points looks much larger relative to the 1.7 percent inflation rate of 1965 than it does relative to the 12.4 percent inflation rate of 1980, it is still important.

But there are also a number of reasons for believing that this build-up will produce more bottleneck inflation. In Viet Nam a lot of the build-up went into items -- food, transportation, clothing -- which could be bought off the shelf from the civilian economy. Viet Nam did not result in a lot of high technology purchases. This build-up focuses much more heavily on the procurement of advanced hardware where shortages can develop.

There is also every reason to believe that the economy has become more inflation-prone with the experience of the past 16 years and that the same bottlenecks would create more inflation in 1982 than they did in 1966. Wages were not indexed in 1965. Wages are highly indexed in 1981. Industries pass cost increases through to their consumers much faster now than they did then. The Federal Reserve Board is also much quicker to fight inflation (whatever its source) with tight monetary policies. Because of the way that the Consumer Price Index is constructed (grossly exaggerating the importance of mortgage interest rates) in the United States, it is clear that whatever the long-run anti-inflationary effects of tight monetary policies, those policies produce more inflation in the short-run than they prevent. All of this is apt to produce an upward movement in inflation somewhat greater than we experienced at the time of Vietnam.

In an inflation prone economy the most likely result is supply-side inflation. Bottlenecks occur and force prices up in limited sectors of the economy, but this sector specific inflation then spreads into wages and other prices.

In the U.S. general excess demand inflation seems to depend not just upon the level of capacity utilization, but the speed with which the economy moves toward higher levels of capacity utilization. In the current conditions rapid growth seems to lead toward inflationary pressures even though there is still a substantial amount of idle capacity. Many observers blame the re-acceleration of inflation in 1978 on a too rapid rate of growth. Econometric models that seek to understand pricing behavior usually have acceleration as well capacity terms.

As a result while unemployment (more than 7 percent) and idle capital capacity (20 to 25 percent depending upon the index used) are high, there is a real question as to whether the U.S. could jump from the 0.5 percent rate of growth of the last three years to a 5.2 percent rate of growth in 1982 and a sustained 4.4 percent rate of growth from 1981 to 1986 (the President's forecast) without accelerating inflation.

While productivity can certainly reverse its present negative course, it cannot reverse its course rapidly. Any analysis of the reasons for the productivity decline leads to fundamental factors that cannot be reversed or overcome in less than 4 or 5 years. Major industrial facilities, for example, simply take 3 to 5 years to build and they cannot help productivity until they are built. As a result the President's expected rate of growth is apt to be far above the economy's capacity to produce leading to inflationary pressures like those engendered in 1978.

But the most likely result is not generalized excess demand inflation produced by a too rapid rate of growth. The President's forecasts are unlikely to be realized because his fiscal policies (the large tax cuts and increases in defense spending) are apt to be offset by his monetary policies.

Essentially the President is proposing to drive his economic car with one foot on the fiscal accelerator and the other on the monetary brake. The result is apt to be high interest rates with modest amounts of growth.

Thus the U.S. is apt to be suffering some supply-side inflation and high interest rates. And given the U.S. role in the world economy, we will be exporting both of these items to the rest of the world.

MITIGATING THE ADVERSE EFFECTS

Generalized excess demand inflation is economically the easiest of the three problems to cure. Given the proposed military budget, the July tax cut was too large. Sometime in the near future America is going to need a substantial tax increase. This is necessary both to pay for the proposed increases in military spending and to pay for the corporate and personal tax cuts that were made in July.

Given the need to raise military spending and to compete with our military allies but economic competitors, the necessary tax increases should focus on raising savings. This means tax increases large enough to move the Federal budget rapidly into a substantial surplus. If a large surplus were coupled with the easier monetary policies that the surplus would make possible, interest rates could fall dramatically.

The current strategy is essentially tight money with easy fiscal policies. That strategy should be reversed. Easier money should be combined with tight fiscal policies where the government is a significant source of national savings.

While any tax will raise revenue, many of those taxes will also reduce private savings. As a result the tax increases should all focus on shifting the present tax system toward a set of progressive consumption taxes. There are two essential elements to this.

A value added tax with an accompanying income tax credit should be levied and used to pay for the de-facto elimination of the corporate income tax and to eliminate the present payroll tax for Social Security. In 1980 Social Security taxes raised $120 billion. In that same year a 10 percent VAT with a $1000 income tax credit would have raised $153 billion. The appropriate tax rate will depend upon the deficits expected over the next five years, but the aim should be to use the VAT to build up a large surplus in the Social Security trust funds and to bring the federal budget into a substantial surplus as soon as possible.

The personal income tax cuts passed in July should be replaced with a tax cut designed to increase savings. The easiest tax cut would be to allow unlimited Keogh and IRA accounts for anyone, for any purpose, for any length of time. Such a tax would instantly convert the federal progressive income tax into a federal progressive consumption tax. A $50,000 family who saved $5,000 would pay taxes on $45,000 but a $50,000 family who withdrew $5,000 from its savings accounts would pay taxes on $55,000 at progressive rates. Such a tax would allow us to raise tax rates on very high levels of consumption.

This tax would be more efficient at raising savings -- a person at the 50 percent bracket would have to save $2 for every $1 in Treasury revenue loss -- and would lead to a much smaller revenue loss to the Treasury.

The first two problems -- weakened civilian high technology firms and bottleneck inflation -- are harder to solve because they require compromises to be made. The easiest option is to spread out the period over which the military build-up is to occur. If this cannot be done, then it is necessary to invest some system of labor, materials, and equipment controls so that military demands do not concentrate their crowding out effects on particular firms, industries, or regions. Essentially the idea would be to make sure that the economic pain to be inflicted on high technology firms is spread out across the entire population.

There are essentially two strategies depending upon how much of an adverse effect the military demands would have on civilian high technology industries. If the aggregate effects were not thought to be too large, then the controls should be used to spread out the adverse effects so that no one firm, industry, or region suffered more than its fair share of the inevitable losses. If the losses are so large that the spreading strategy would substantially weaken everyone, then the country would need to decide which civilian high technology industries or firms it could afford to sacrifice and allocate all of the losses to these firms to keep the remaining high technology firms viable.

When it comes to dealing with bottleneck inflation, it is interesting that the Reagan administration is suggesting none of the manpower training policies that were associated with the WWII or Korean War build-ups. Supply side economics is to be practiced everywhere except in the labor market. But the labor market is critical.

The adverse effects are now starting to be seen. High schools find that they cannot obtain or retain mathematics and science teachers. But without a supply of scientifically trained high school graduates, it is not possible to rectify either the current shortage of engineers or skilled blue collar workers. Signs exist that the exodus of scientific manpower is now starting to hurt the ability of colleges and universities to train the next generation of scientific manpower. Soon these shortages will be appearing in civilian high technology firms.

In the 1950s and 1960s the National Defense Education Act was used to strengthen the country's supply of skilled workers. Just an act needs to be put in place for the 1980s if we are to do what the Reagan Administration is proposing.

Representative HAMILTON. Mr. Capra, please proceed.

STATEMENT OF JAMES R. CAPRA, SENIOR ECONOMIST OF THE FEDERAL RESERVE BANK OF NEW YORK, NEW YORK, N.Y.

Mr. CAPRA. Mr. Chairman and members of the committee, I appreciate the opportunity to share my views with you on defense and the economy. The committee has already heard from a distinguished group of economists, including Mr. Thurow. Today, I'd like to amplify some of the points that they've raised and, hopefully, provide some new sights and some new data.

In March, President Reagan proposed large dollar increases for defense from 1981 to 1986. As shown in chart 1 of my prepared statement, even after adjusting for small reductions in September, the increases in the President's budget are very large compared to the Carter budget of January, and even larger compared to an extrapolation of then-current policies or policies in effect prior to January.

The primary questions raised by the chairman in his invitation to testify were: Will the effects of defense spending on aggregate demand be inflationary; and will the rapid pace of the buildup create bottlenecks and cost overruns?

As might be expected—and the subcommittee has already heard from other witnesses—it's impossible to give unambiguous answers to these questions, unambiguous yes or no answers. Explanations for this are many and they include the familiar reasons of uncertainty about the economy and about the ultimate outcome of congressional debate on offsetting nondefense budget cuts.

In addition, though, we also have the problem of not knowing in very much detail the composition of the administration's 1983 to 1986 defense budget plans. Without knowing what items, in fact, they plan to purchase in 1983 through 1986, it becomes somewhat difficult to assess the longrun bottleneck problems. We can make some judgments about current problems given the items to be purchased for 1982 and the items that are currently being purchased. But for the longrun problems—the longrun bottleneck question—we have some problems in assessing what will happen.

On balance, I believe the stimulus provided to aggregate demand by the proposed increase in defense would mean a higher inflation rate for the next few years than would be the case without the defense buildup, even if the Federal Reserve were not to accommodate the extra Government spending. Now how much additional inflation depends on a number of factors; that is, whether the inflation is a tenth of a percent or 10 times that amount.

These factors include the starting point for the inflation rate, the current state of inflationary expectations, and a number of other factors.

Now from the standpoint of defense industries, it currently appears that bottlenecks are not a problem, contrary to some previous testimony. Now whether these bottlenecks develop in the future depends largely on the composition of the administration's 1983 to 1986 budget plans.

Starting first with aggregate demand, various economists have suggested that the budget increases in the Vietnam era ushered in our current inflationary momentum. This school of thought suggests that the currently planned defense budget increases would do the same.

On the other hand, the Chairman of the Council of Economic Advisers and others have suggested that for a rise in defense spending to result in anything more than a transitory increase in the price level, that spending would have to be accommodated or monetized by the Federal Reserve.

Now, unfortunately, it's not possible to turn back the clock in order to validate or refute arguments about inflation in the 1960's. To evaluate the effects of defense buildup for any specified growth path of the money stock, all that we can use is economic logic and historical statistical relationships.

In simplified terms, the analysis or the logic goes something like this. Initially, an increase in Government purchases for defense would result in more real aggregate demand compared with the path for the economy that does not include a defense buildup. Now this could be expected to result in more inflation, unless the economy were operating well below capacity.

Now in 1965, of course, the economy was operating near full capacity. The higher nominal GNP resulting from more real aggregate demand and possibly more inflation leads to an increase in desired money holding. However, for any growth path for the money stock you might specify, interest rates would be higher under these circumstances. Eventually, higher rates choke off the real growth and inflation rate would return—the price level would return to where it would have been without the defense buildup.

That's the argument by Chairman Weidenbaum, and others.

Now the description of the dynamics that briefly went through just a second ago of an increase in defense spending combined with an unchanged path for money growth leaves a number of questions unanswered. In particular, how long would it take for higher interest rates to slow real growth and inflation? And before that occurred, how much inflationary momentum would develop?

In short, how long is transitory?

The length of the lags and the relative magnitude of these offsetting effects are primarily empirical rather than theoretical questions. So to analyze them, my colleagues and I at the New York Fed did two experiments using an empirical model designed to capture the historical behavior of the U.S. economy, the Federal Reserve-MIT-Penn model.

In the first experiment, we compared estimates of the path the economy followed in 1966 through 1969, assuming the historical defense buildup, with estimates of the path the economy might have followed without that buildup, taking the actual historical pattern of monetary expansion for both cases.

So the same money path for both cases, one with the defense buildup, one without the defense buildup.

In the second experiment, we compared the path the economy might have taken with the defense buildup, but with a more restrictive monetary policy, to a path the economy might have taken without the defense buildup, but under a looser monetary policy.

Now the results of the first experiment reported in chart 2 in my prepared statement are that 12 quarters after the start of the buildup in 1966, the inflation rate with the defense buildup exceeds the estimated rate under the no-build-up assumption by 3 percentage points, even though we had the same money path under both cases.

The estimated difference narrow after that because real growth cuts into what is happening in the economy and helps lower the inflation rate.

In the second experiment, the Federal Reserve not only doesn't accommodate the increase in defense; it actively seeks to counteract it. In the second experiment, we have a higher inflation rate, 1 percentage point higher, as long as eight quarters after the start of the buildup.

Now all econometric estimates are subject to a considerable margin of error and should be evaluated with caution. Nevertheless, the empirical relationships do tend to refute the hypothesis that a defense buildup, in and of itself, had no inflationary consequences and the experiments we did I think provide some rough measures of how long inflationary pressures from a buildup could have beeen expected to have continued.

Now the hard question is whether economic conditions today are enough like those that existed in the mid-1960's to justify similar conclusions about the inflationary effects of the planned defense buildup. Clearly, there are more differences than similarities. The economy is operating below its potential. Unemployment is higher. Also, the defense increase is proportionately smaller. Using the administration's economic assumptions and defense estimates, defense outlays as a percent of GNP could increase by 1.8 percentage points in 1980 through 1985, compared to 2.1 percentage points between 1965 and 1968. On the other hand, the inflation rate is initially far higher, as alluded to by Mr. Thurow in his testimony, and the public's inflationary expectations are more unstable.

Under these circumstances, what seems to be a fair conclusion is that from the standpoint of aggregate demand, while the increase in the defense budget may not cause the inflation rate to go up from where it is now, it could tend to retard progress toward reducing inflation under maintenance of a policy of monetary restraint.

Now I'd like to turn briefly to the question of bottlenecks and defense suppliers.

The chart that's up there [indicating] shows total defense spending for procurement projected 1980 through 1985 and compares that to the 1965 to 1970 period in constant dollars. As the chart indicates, the buildup plan is faster, longer, and larger than the Vietnam buildup in terms of procurement. This has been alluded to in previous testimony, the fact that this buildup is heavily concentrated in defense procurement. Now this rapid pace has caused some economists, for example, Charles Schultze, to suggest that bottlenecks and price inflation resulting from those bottlenecks could develop.

There are two concerns here. One concern is whether the bottlenecks will create inflation in the defense industries that will then spread to the nondefense area. The second concern, that expressed by Charles

Schultze, is that the bottleneck inflation will essentially erode the purchasing power for defense and mean that essentially, in the 1983 to 1986 period, our military forces will be operating with fewer, more expensive, poorly maintained items.

Now in terms of the first question, whether this bottleneck inflation will spread to the economy as a whole, it's our view, or it's my view, in fact, that the answer to this is probably no. It's unlikely that bottlenecks will develop in defense that would lead to these generalized price pressures. This appears to be particularly true at the prime contractor level in the near-term; that's fiscal year 1982. For example, commercial aircraft orders are down. McDonnell Douglas recently reported a drop in orders for its DC-9 and DC-10 aircraft, and Boeing has announced a decline in scheduled deliveries of 727's and 747's.

For the longer term, we need data on what will be bought in 1983 to 1986 before we can judge the economywide pressures. All that we can say now is under the administration's current projections for total procurement budget authority in 1983 through 1986, it's unlikely that military procurement would account for a large enough part of goods-producing GNP—that's GNP less services—so that defense price increases would spill over to the nondefense sectors to any measurable degree.

Now the second question raised by the rapid pace of the buildup is whether bottlenecks and increased prices will lead to cost growth or overruns and result in a situation where our forces are left with too small a quantity of very high-priced weapons and reduced readiness to deploy, use, and maintain them in combat?

The answer to this question is even less clear. Right now there does not appear to be a bottleneck problem. However, increased prices for major defense procurements, for whatever the reason, appear to be already eroding some of the objectives of the defense buildup. Let me elaborate on these points briefly.

As I just mentioned, excess capacity among prime contractors probably makes bottlenecks at that level unlikely in the near term. However, concern was expressed in previous testimony about the subcontractor level; in particular, producers of castings, forging, and electrical connectors. However, the data shown in table 1 of my prepared statement suggests that leadtimes for these items have decreased over the past year and that these subcontractors may not present a serious bottleneck problem over the next year. For example, in table 1, leadtimes for aluminum forgings have decreased in the past year by 34 percent.

Now the reasons for these decreases include the dropoff in commercial airline orders and the little known fact that in terms of quantities to be purchased, the defense buildup so far is not as large as had been anticipated. This fact is illustrated by the data in table 2 comparing planned purchases of aircraft and missiles for fiscal year 1982 announced in the Carter budget of January 1980, with current plans for fiscal year 1982. The data show that although the new budget reflects a large dollar increase in procurement from the Carter budget, quantities to be purchased are essentially unchanged for aircraft and are generally lower for missiles.

Now whether the current favorable outlook for defense prime and subcontractors will change in 1983 through 1986 depends primarily on the composition of the defense program in terms of quantities purchased. And this program will be announced in January. The other thing it would depend on, of course, is demand for materials by nondefense producers.

Now this leads me to my last point and that is, despite the favorable trends in production leadtimes and the apparent absence of a significant bottleneck problem, defense appears to already have a severe cost growth problem. Unit costs for major purchases have increased across the board.

In table 3, unit costs for 37 major defense systems have risen dramatically from what was anticipated in January of 1980. These cost increases help explain the fact that I was just mentioning, and that's why the quantities to be purchased for many systems have not changed much from what was submitted in 1980.

An important factor is that the current budget proposal for the 37 systems listed in table 3 is approximately $4 billion more than President Carter requested in January of 1980. Of that $4 billion, 85 percent, or $3.5 billion, is to fund growth in unit cost—$500 million is for increased purchases of items.

Now the implications of this cost growth are probably as much military as economic. Most defense scholars agree that more needs to be spent on readiness items such as ammunition, spare parts, and support equipment. However, trends in cost growth for major weapons systems and the current pressure for reduction in the defense budget proposal suggests that defense may be faced with the unpalatable choice of significantly scaling back or stretching out weapons systems procurements or cutting into readiness.

Either way, the end result would be that the increase in defense capabilities might be much less than anticipated. There are a number of explanations for the cost growth. These include estimates of inflation and slowing down or stretching out of programs. This subcommittee has heard time and again that the market basket of defense goods is quite different from that of the economy in general. Consequently, there's no reason to expect that a defense budget prepared using projections of the GNP deflator for pricing the current dollar cost of defense purchases will be an accurate one, even if the initial economic forecast is.

However, inflation is not the only explanation for this problem. For example, the ground-launched cruise missile costs increased by 38 percent in 1 year without a quantity change, and a 38-percent increase is just too much to explain by inflation.

Because no recent studies of weapons system cost growth are available, cost analysts are frankly puzzled by the current problems. Studies in the 1960's by Gene Fisher of the Rand Corp. and others cited poor and inadequate specifications and design problems, as well as the attempt to leap technological barriers as some of the reasons for cost overruns in that period. Whether these explanations apply today remain to be seen.

To conclude, I'd just like to mention that in his testimony, Jacques Gansler made a number of recommendations for improving the weapons system acquisition process in defense. These ranged from introducing more competition into the awarding of follow-on contracts to creating incentives for contractors to make capital investments.

Now whether the implementation of his proposals would solve our current problems is unclear. However, one thing is clear and that is unless something is done about weapons system cost growth, the United States in the 1980's may be paying more for defense, but buying less.

Thank you.

Representative HAMILTON. Thank you, Mr. Capra.

[The prepared statement of Mr. Capra follows:]

PREPARED STATEMENT OF JAMES R. CAPRA*

Mr. Chairman and members of the Committee, I appreciate the opportunity to share with you my views on defense spending and the economy. The Committee has already heard testimony on this subject from a distinguished group of economists. Today, I would like to amplify some of the points they raised and hopefully provide some new insights.

In March, President Reagan proposed large dollar increases for defense in 1981-1986. As shown in Chart 1, even after adjusting for small reductions in September, the increases in the President's budget are large relative to the Carter budget of January and even larger compared to an extrapolation of policies in effect prior to January. The primary questions raised by the Chairman in his invitation to testify were:

- Will the effects of defense spending on aggregate demand be inflationary?
- Will the rapid pace of build up create bottlenecks and increase cost overruns?

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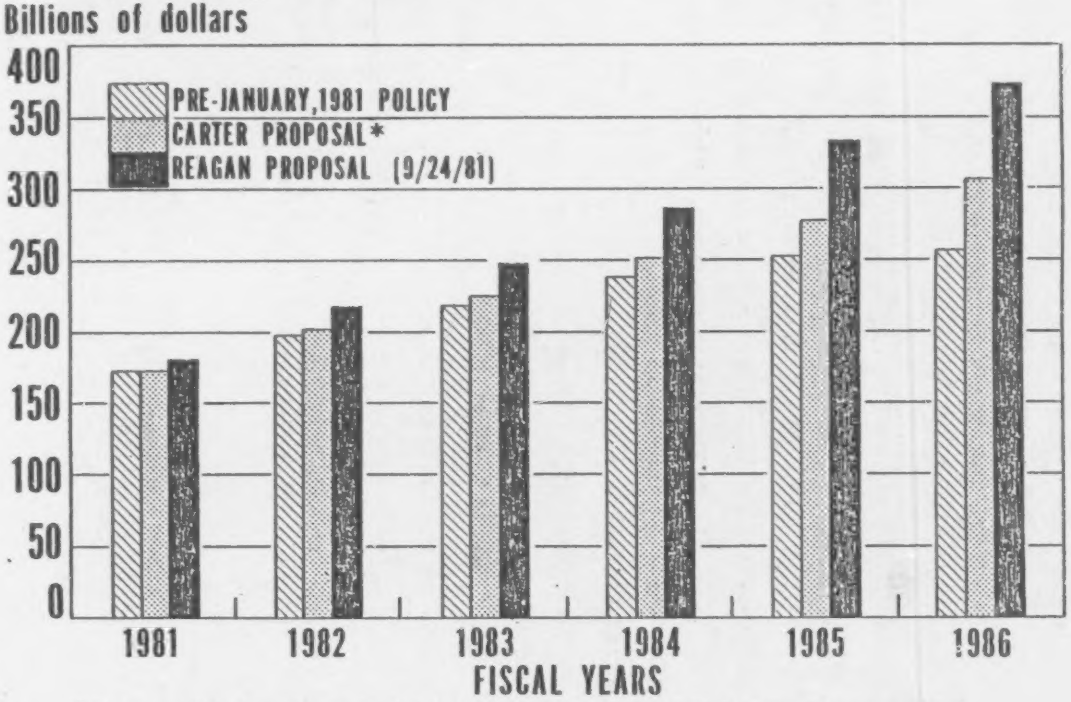
* The views expressed are my own and are not necessarily those of the Federal Reserve Bank of New York or the Federal Reserve System.

CHART 1

DEFENSE BUDGET AUTHORITY ESTIMATES AND PROJECTIONS



*Carter numbers have been adjusted to reflect economic assumptions in the Reagan proposal.

As might be expected, it's impossible to give unambiguous yes or no answers to these questions. Explanations for this include the familiar reasons of uncertainty about the economy and about the ultimate outcome of the Congressional debate on non-defense budget cuts. In addition, however, we also have the problem of not knowing in very much detail the composition of the defense budget plans for 1983-1986. This makes it very difficult to assess the long run bottleneck problem with much confidence.

On balance, I believe that the stimulus provided to aggregate demand by the proposed increase in defense would mean a higher inflation rate for the next few years than would be the case without the defense buildup, even if the Federal Reserve were not to accommodate the extra government spending. How much additional inflation--that is whether it would be one tenth of one percent or ten times that amount--depends on a number of other factors such as how close the economy is to its potential, the starting point for the inflation rate, and the current state of inflationary expectations. From the standpoint of defense industries, it appears that bottlenecks are not currently a problem. Whether they develop in the future and contribute to what is a severe cost growth problem in defense depends largely on the composition of the 1983-1986 budget request.

Aggregate Demand and the Vietnam Era

Various economists have suggested that the defense budget increases in the Vietnam era resulted in an inflationary momentum from which we are still suffering. The proposed defense budget increases would do likewise, according to this school of thought. On the other hand, the Chairman of the Council of Economic Advisors and others have suggested that for a rise in defense spending to result in anything more than a transitory increase in the price level, that spending would have to be accommodated or monetized by the Federal Reserve. Unfortunately, it is not possible to turn back the clock in order to validate or refute arguments about the effects of fiscal or monetary policy in the Sixties. To evaluate the effects of a defense buildup, for any specified growth path of the money stock all that can be used is economic logic and historical statistical relationships. In simplified terms, the analysis goes something like this.

Initially, an increase in Government purchases for defense would result in more real aggregate demand, compared with a path for the budget and the economy that does not include a defense buildup. This could be expected to result in more inflation unless the economy were operating well below capacity. (In 1965, the economy was operating near full capacity.) The higher nominal GNP, resulting from more real aggregate demand and possibly more inflation, leads to an increase in desired money holding. However, for any growth path for the money stock you might specify, interest rates would be higher. Eventually, higher rates choke off the additional GNP growth and inflation slows. At some point GNP and interest rates might even converge back to the levels that would have been reached in the absence of the defense stimulus.

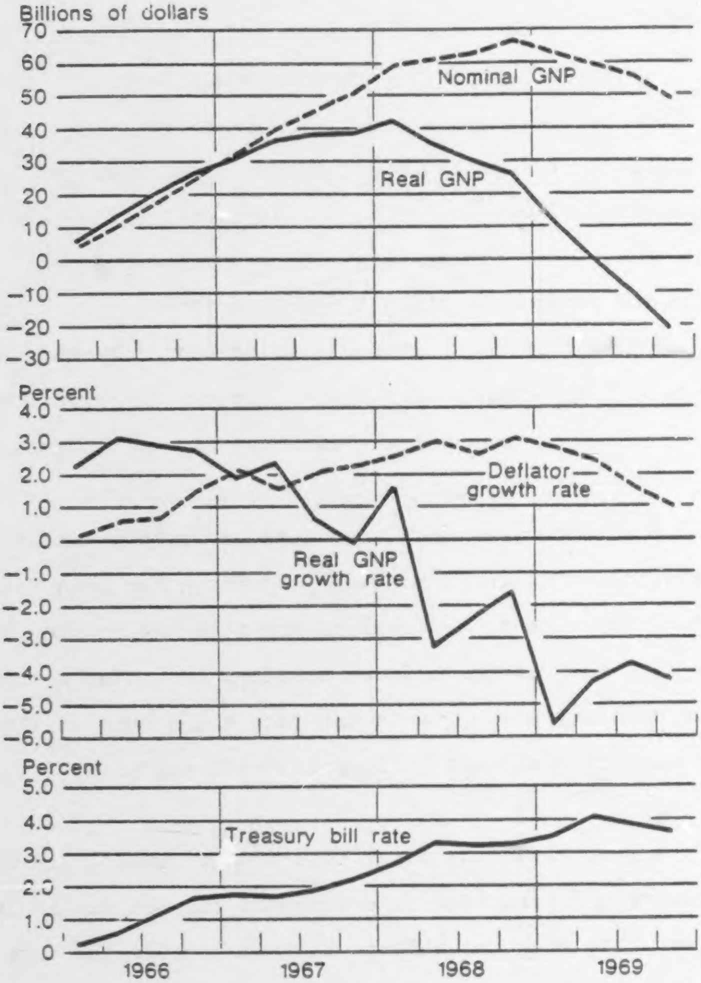
The description of the dynamics of a surge in defense spending, combined with an unchanged path for money growth, leaves a number of questions unanswered. In particular, how long would it have taken for higher interest rates to slow real growth and inflation and, before that occurred, how much inflationary momentum would develop? In short, how long would a transitory increase in the price level last? The length of lags and the relative magnitudes of various economic effects are primarily empirical rather than theoretical questions. To analyze them, my colleagues and I did two experiments using an empirical model designed to capture the historical behavior of the United States economy, the Federal Reserve-MIT-Penn (FMP) econometric model. In the first experiment, we compared estimates of the path the economy followed in 1966 through 1969, assuming the historical defense buildup, with estimates of the path of the economy without that defense buildup--taking the actual historical pattern of monetary expansion for both cases. In the second experiment, we compared the path the economy might have taken with the Vietnam defense buildup, but under a more restrictive monetary policy, with the path the economy might have taken without a defense buildup but with the historical growth of money.

The results of the first experiment, reported in Chart 2, are that twelve quarters after the start of the buildup in 1966 the inflation rate with the defense buildup exceeds the rate under the no-buildup assumption by 3 percentage points. The estimated differences narrow after that because of the lower real growth resulting from higher interest rates. The results

CHART 2

Estimated Economic Effects of the Vietnam Era Defense Buildup*

Assumes constant money stock growth



*For selected economic variables, the differences between the results of two simulations are plotted. The first simulation is based on the actual Vietnam defense buildup. The second simulation is based on defense spending levels with no Vietnam defense buildup. Both simulations are based upon the same money stock path, the actual money stock path in those years.

of the second experiment (in which the Federal Reserve not only does not accommodate the defense increase but actively seeks to counteract it) reveal an inflation rate after eight quarters approximately 1 percentage point higher for an economy with a defense buildup and low money growth than for a simulation of the economy without a defense buildup but with the historical pattern of monetary growth. All econometric estimates are subject to a considerable margin of error, and the results of experiments like these should be assessed with caution. Nevertheless, the empirical relationships do tend to refute the hypothesis that the defense buildup in and of itself had no inflationary consequences and provides some rough measures of how long inflation pressures from a buildup could have been expected to continue.

The hard question is whether economic conditions today are enough like those that existed in the mid-1960's to justify similar conclusions about the inflationary effects of the planned medium-term defense buildup. Clearly, there are more difference than similarities. The economy is operating further below its potential than it was in the earlier period, and unemployment is higher. Also, the defense increase is proportionally smaller; using the Administration's economic assumptions and defense estimates, defense outlays as a percentage of GNP would increase by 1.8 percentage points between 1980 and 1985, compared with 2.1 percentage points between 1965 and 1968. But the inflation rate is initially far higher, and the public's inflationary expectations are more unstable. Under these circumstances, what seems to be a fair conclusion is that from the standpoint of aggregate demand, while the increase in the defense budget may not cause the inflation rate to go up, it could tend to retard progress toward reducing inflation under maintenance of a policy of monetary restraint.

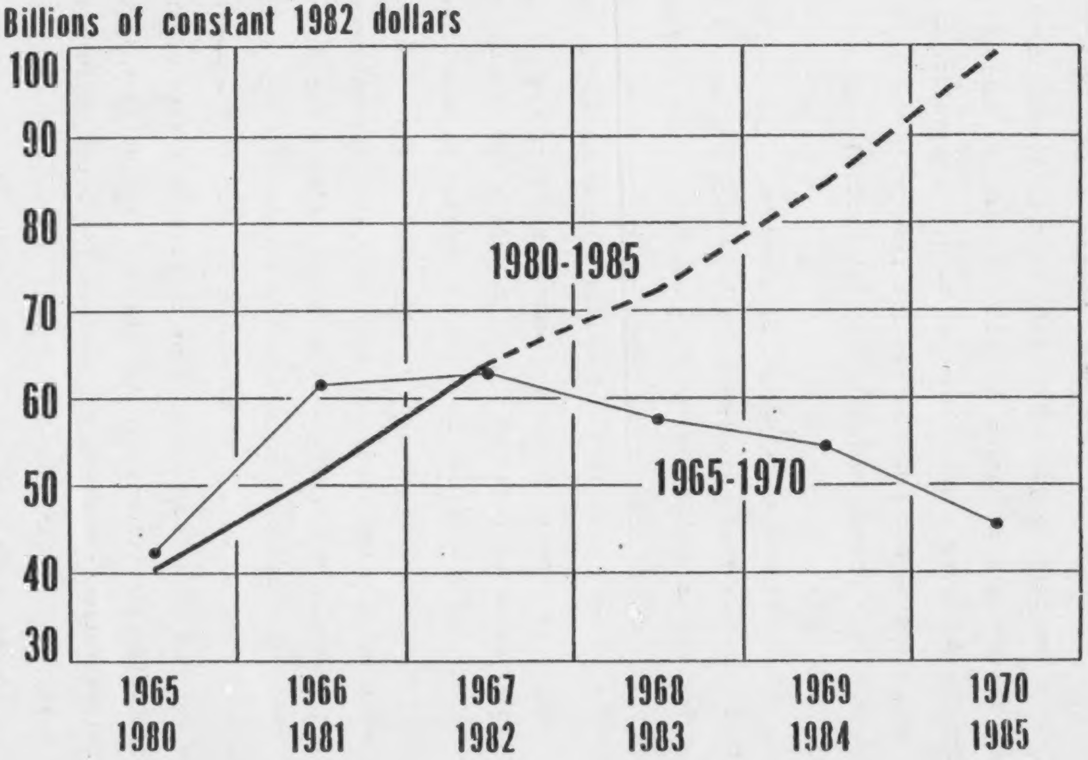
Bottlenecks and Defense Suppliers

Although total defense spending as a percent of GNP would increase less under the Administration's plan than during the Vietnam era, the increase in procurement would be faster, larger, and of longer duration than the Vietnam buildup unless the Administration changes the size or the mix of its 1983-1985 budget plans in January. Chart 3 makes a constant dollar comparison of the planned increase in defense procurement budget authority in 1980-1985 and the increase in 1965-1970. The broken line for 1983-1985 reflects the fact that the Administration has not yet identified what hardware it plans to purchase in that period and, as a result, its plans are less firm than those for 1982.

The rapid pace and size of the increase in procurement leads to two questions. The first question is will bottlenecks develop, accompanied by price increases for selected commodities and raw materials, that will spread beyond the defense industry to the economy at large? What this boils down to is whether the demands for, say, military construction will drive up the price of residential and non-residential construction, or whether the military demand for tanks and fighting vehicles will drive up the cost of autos and trucks, or whether the military demand for aircraft and missiles will drive up the price of commercial aircraft?

CHART 3

PROCUREMENT BUDGET AUTHORITY



The second question is whether bottlenecks and increased prices for defense goods will lead to cost growth (or overruns) and result in a situation described in earlier testimony by Charles Schultze where because of budget constraints on total defense spending our armed forces are left "with too small a quantity of very high priced weapons, and with reduced readiness to deploy, use and mantain them in combat.

The answer to the first question is probably no. It's unlikely that bottlenecks will develop in defense that would lead to generalized price pressures. This appears to be particularly true at the prime contractor level in the near term -- fiscal year 1982. Domestic auto sales are at their lowest level in 11 years. Commercial aircraft orders are down. McDonnell Douglas recently reported a drop in orders for its DC9 and DC10 aircraft and Boeing has announced a decline in scheduled 1981 deliveries of 727's and 747's. New housing starts are at the lowest level since 1966. In addition, with the announced change in the basing mode for the MX missile, defense construction demands will be quite modest in the future. In the longer term, we need data on what will be bought in 1983-1986 [redacted] before we can judge the economy-wide price pressures that might result from defense bottlenecks. All that we can say is that under the Administration's current projections for total procurement budget authority in 1983-1986, it is unlikely that military procurement would account for a large enough part of "goods producing" GNP (GNP less services) so that defense price increases would spillover to the nondefense sectors to any measurable degree.

Will bottlenecks and increased prices for defense goods caused by the rapid pace of the buildup lead to a cost growth that will ultimately undermine the Administration's national security objectives? The answer to this question is even less clear. Right now there does not appear to be a bottleneck problem. However, increased prices for major defense procurements--for whatever the reason--appear to be already eroding some of the objectives of the defense buildup. Let me elaborate on this point somewhat.

As I just mentioned, excess capacity among prime contractor probably makes bottlenecks at that level unlikely in the near term. Much has been written about the subcontractor level, however. Jacques Gansler, in his testimony, expressed concern over the lower tier of contractors that has been allowed to deteriorate in the post-Vietnam era. Particular concern has been expressed over the producers of castings, forgings, and electrical connectors for airframes and engines. However, production lead times for aircraft materials have by and large been decreasing over the past year. Data collected by the Department of the Air Force, summarized in Table 1, shows that between October 1980 and July 1981 material lead times for forgings, castings and various electrical components have decreased across the board.

Table 1

Percent Changes in Material Lead Times
October 1980 to July 1981

	Change
Forgings (50 lbs or less)	
Aluminum	-34.5%
Steel	-31.5
Titanium	-11.0
Forgings (Over 50 lbs.)	
Aluminum	-33.8
Steel	-30.6
Titanium	-11.5
Castings	
Aluminum	-17.5
Steel	+10.3
Titanium	-28.1
Electrical Components	
Capacitors	-17.6
Connectors	-10.9
Integrated Circuits	-0-
Relays	-13.2
Resistors	-14.8
Switches	-23.3
Transformers	-10.7

Source: Department of the Air Force

The reasons for this include the dropoff in commercial airline orders and the little known fact that in terms of quantities to be purchased, the defense buildup so far is not as large as had been anticipated. This fact is illustrated by the data in Table 2 that compares the planned purchases of aircraft and missiles for fiscal year 1982 announced in the Carter budget of January 1980 with current plans for fiscal year 1982. The data show that although the new budget reflects a large dollar increase in procurement from the Carter budget, quantities to be purchased are essentially unchanged from plans released a year ago for aircraft and are generally lower than anticipated for missiles. The information we have on the composition of the 1982 defense buildup and current trends in production lead times lead me to conclude that in the near term it is unlikely that bottlenecks will lead to price increases for major defense weapon system procurements. Whether the current favorable outlook for defense prime and subcontractors will change in 1983-1986 depends primarily on the composition of the defense program to be announced in January as well as the demand for materials from non-defense producers.

This leads me to my last point. Despite the favorable trends in production lead times and the apparent absence of a significant bottleneck problem, defense appears to already have a severe cost growth problem. Unit costs for major defense weapon system purchases have increased across the board. As shown in Table 3, the unit costs for 37 major defense systems have risen dramatically from what was anticipated in January of 1980. The anticipated unit price of the M1 tank for 1982 is up by 76 percent

Table 2

Comparison of Carter (January, 1980) Planned Purchases for Fiscal Year 1982 with Reagan (September, 1981) Proposal

	January 1980 Quantity	September 1981 Quantity	Change
Aircraft			
AH64	14	14	-
VH60	96	96	-
F14	24	30	+6
F18	96	63	-33
SH60B	18	18	-
P3C	12	12	-
E2C	6	6	-
SH2F	18	18	-
EC130Q	2	2	-
A-10	46	20	-26
F-15	30	42	+12
F-16	120	120	-
KC10	6	0	-
E3A	2	2	-
Missiles			
Roland	1230	0	-1230
Patriot	391	294	-97
Hellfire	2760	1075	-1685
Pershng II	39	39	--
MLRS	2496	2496	--
Trident I	72	72	--
Sparrow (Navy)	1120	905	-215
Phoenix	72	72	--
Harpoon	240	340	+100
Harn (Navy)	180	134	-46
ALCM	480	440	-40
GLCM	54	54	--
Sparrow (Air Force)	960	1560	+600
Harm (Air Force)	300	136	-264
Maverick	490	490	--

Table 3

Projected Fiscal Year 1982 Unit Costs of Major Weapon Systems
January, 1980 Estimate Compared to March 1981

Army Systems	January 1980 Estimate (millions of dollars)	March 1981 Estimate (millions of dollars)	Change (percent)
AH64	25.81	29.70	+15
UH60	3.71	5.54	+49
Roland	.41	.60	+48
Patriot	1.47	2.26	+53
Hellfire	.04	.12	+167
Pershing II	4.25	4.92	+16
MLRS	.06	.07	+19
Fighting Vehicle	.90	1.35	+49
M-1 Tank	1.39	2.44	+76
Divad	4.18	5.86	+40
Navy Systems			
F14	33.50	34.48	+3
F18	22.38	32.01	+43
SH60B	27.10	38.37	+42
P3C	33.49	35.59	+6
E2C	36.95	41.02	+11
SH2F	11.36	12.91	+14
EC130Q	30.25	37.45	+24
Trident I	10.34	10.88	+5
Sparrow	.13	.16	+22
Phoenix	1.50	2.03	+36
Harpoon	.78	.83	+7
Harm	.51	.80	+58
SN688	517.50	581.80	+12
CG47	896.40	1,018.20	+14
FFG-7	278.73	323.97	+16
MCM	87.30	99.70	+14
Tagos	37.65	39.13	+4
Air Force Systems			
A-10	8.66	10.40	+20
F-15	28.02	29.33	+5
F-16	11.53	12.96	+12
KC10	49.33	54.63	+11
E3A	114.35	118.00	+3
ALCM	1.06	1.34	+26
GLCM	4.20	5.80	+38
Sparrow	.12	.15	+19
Harm	.45	.66	+44
Maverick	.39	.47	+21

in just over one year. The F18 aircraft is up 43 percent. The unit cost of the ground launched cruise missile (GLCM) is up 38 percent. These cost increases help explain why the quantities to be purchased for many systems under the current defense program are lower than the quantities programmed in January, 1980. An important fact is that the current budget proposal for the 37 systems listed in Table 3 is approximately $4 billion greater than the amount programmed by President Carter in January of 1980. Of that $4 billion, about 85 percent or $3.5 billion is to fund growth in the unit costs.

The implications of this growth in unit cost are probably as much military as economic. Most defense scholars agree that more needs to be spent on readiness items such as ammunition, spare parts, and support equipment. The current budget proposal recognizes this need and for 1982 includes an $8 billion increase over 1981 for such items. However, trends in cost growth for major weapon systems and the current pressure for a reduction in the defense budget proposal suggest that defense may be faced with the unpalatable choice of significantly scaling back or stretching out weapon system procurements (an action that will further increase unit costs) or cutting back on readiness items in order to fund the cost growth of major systems. Either way the end result could be that the increase in defense capabilities might be much less than anticipated.

Many explanations have been given for cost growth of defense weapon systems. These include poor estimates of inflation. As the Committee has heard from almost every witness in these hearings, the market basket of defense goods is quite different from that of the economy in general. Consequently, there is no reason to expect that a defense budget prepared using projections of the GNP deflator for pricing the current dollar cost of purchases will accurately reflect defense costs, even if the GNP deflator forecast is an accurate one. Although more accurate defense price level forecasts would help reduce the problem of unanticipated cost growth, they can't explain 76 percent jumps in unit costs in one year such as that experienced by the M1 tank. A second reason given is cutbacks in quantities. During the past two years, quantities have been consistently cut, in many cases in response to cost growth. This further complicates the problem since unit costs are increased even more when defense contractors are forced to produce in uneconomic quantities. However, prices for some systems have increased by more than what can be reasonably attributed to inflation even without quantity changes. (GLCM costs increased by 38 percent in one year without a quantity change). Because no recent studies of weapon system cost growth are available, cost analysts are frankly puzzled by the current problems. Studies in the 1960's by Gene Fisher of the Rand Corporation and others cited poor and inadequate specifications and design problems as well as the attempt to leap technological barriers as some of the ~~[illegible]~~ reasons for cost overruns in the 1950's and 1960's. Whether those explanations apply today remains to be seen.

In his testimony before this Committee, Jacques Gansler made a number of recommendations for improving the weapon system acquisition process in defense. These ranged from introducing more competition into the awarding of follow-on contracts to creating incentives for contractors to make capital investments. These recommendations would in all likelihood help reduce the problems of cost growth. Whether implementation would solve our current problems is unclear. However, one thing is clear--that is, unless something is done about weapon system cost growth, the U.S. in the 1980's may be paying more for defense but buying less.

Representative **Hamilton**. Gentlemen, thank you very much for your testimony. Let's begin with a general question about the current economic situation. We are told now that we are in a recession. Ordinarily, we do not think of increasing taxes at a time of a recession. You have recommended that to us, Mr. Thurow. I am not sure what your position is on that, Mr. Capra.

A TAX INCREASE WITH A RECESSION

But why would you be coming in here recommending an increase in taxes when we are heading into a recession?

Mr. **Thurow**. What you want to think about is reversing the current economic strategy. If I understand the current economic strategy, it's basically to have loose fiscal policies—of a big deficit offset by very tight monetary policies.

And if you think of what the economy needs in the longrun, I would suggest we need exactly the opposite. You need tight fiscal policies so that you raise some of the extra savings that the economy needs. That allows you to produce loose monetary policies with much lower interest rates.

Now one of the ways we can cure the defense buildup problem is simply by having a recession. If you have a monetary-induced recession coming out of high interest rates, then obviously, you're not going to have a lot of these bottleneck problems because civilian demands are going to be falling while military demands increase.

Representative **Hamilton**. So you do not hesitate to increase taxes now, even though we are in a recession?

Mr. **Thurow**. If you look at the stimulus coming down the line, you have, in Keynesian terms, you have a countercyclical policy in place. I think you have to think about what could you do in Congress that could play a positive role in dramatically getting interest rates down rapidly.

That's the only thing I know you could do to dramatically get interest rates down rapidly.

LENGTH AND DURATION OF THE RECESSION

Representative **Hamilton**. What is your judgment as to how long and how deep the recession will be?

Mr. **Thurow**. Basically, I think you're looking at a world where you will see very little economic growth before next July, at the very earliest, when you have the first big tax cut. When you have a big military buildup, the Defense Department is also not going to be pumping orders out the door as fast as they claim they're going to be pumping orders out the door. Therefore, the military orders and the tax cuts I think are going to hit the economy in the last half of 1982, and I see very little economic growth between now and the last half of 1982.

Representative **Hamilton**. Mr. Capra, do you want to comment on the recession, how you think we ought to proceed to get out of it? Do you agree with Mr. Thurow?

Mr. **Capra**. Well, he certainly raised one alternative, which is to raise taxes and to follow a somewhat different monetary policy. At the moment, of course, the Federal Reserve is committed to a course of monetary policy. It's unclear what the other alternatives are.

The economy will get a considerable amount of stimulus next July when the 10-percent tax cut goes into effect. We'll get some anticipatory stimulus and some stimulus from the January parts of the tax cut. Withholding won't change, but the taxpayers will, during the next tax year, be able to take some of the benefits of the reductions in the marriage penalty and other tax changes, not necessarily in withholdings, but in their planned payments for the next year.

Representative **Hamilton**. Mr. Thurow just made a very interesting observation about reversing the present mix of policy. That seems rather startling in some respects. How do you respond to that at the Federal Reserve? He is saying we ought to have exactly the reverse of what we have.

Mr. **Capra**. I'm the fiscal expert. That's really not my area of expertise.

Representative **Hamilton**. Very well. [Laughter.]

AGREEMENT ON DEFENSE BOTTLENECKS

Mr. Thurow, Mr. Weidenbaum says that this buildup in defense is going to be very gradual, and defense is going to be taking a smaller share of GNP and there is not going to be any bottleneck problem. Mr. Capra does not think there is going to be any bottleneck problem, either, apparently.

What is your response to their argument? How come you figure there is going to be a bottleneck problem?

Mr. **Thurow**. I think in some of these areas you see bottlenecks at the moment.

Representative **Hamilton**. Whereabouts?

Mr. **Thurow**. If you wanted to open up a firm to produce civilian computers, I don't think you could find the manpower to do it.

Representative **Hamilton**. Of what?

Mr. **Thurow**. If you wanted to open a firm to build civilian computers, I don't think that you could find the manpower to do it in the United States right at this moment. I know in Boston it is physically impossible to open up another computer factory because the skilled people to man it simply aren't there.

If you look at the percentage of procurement that's going into electronics, it is rising very rapidly. Forty percent of the cost of a naval cruiser is now the electronics that go into it.

So when you talk about military procurement going up much faster than it did in Vietnam, if you looked at essentially electronics military procurement, you'd get an even steeper line, and that's an industry that's now working at capacity.

Representative **Hamilton**. I can understand how economists would disagree whether or not you are going to have bottlenecks 2 years down the road. But we have got testimony that cannot agree on whether there are bottlenecks now.

What is the matter? Are the data just that vague or is it too hard to see? You are arguing that you have a bottleneck; he is saying "no bottlenecks." Are you looking at different data? Why the difference?

And that is not unusual between you two. We have had the same thing with other economists.

Mr. THUROW. Well, I think there are two problems here. One, when you get to this kind of detailed data, there isn't a lot of it. The second problem, obviously, it depends a little bit on what you call a bottleneck, because you can always go into the rest of the economy and rob personnel away from them, pay higher prices. I would think that the very high rate of inflation in the defense industries right at this moment would indicate at least a little bit of bottleneck problems. You've got to have some explanation as to why the defense deflator is going up much faster than the normal GNP deflator.

The standard explanation for that would be that they are having peculiarly supply problems that other people aren't having in the general economy; otherwise, you'd expect the expense deflator to essentially rise at the rate for the whole economy, and it's rising much faster.

Representative HAMILTON. Well, we have had the explanation given to us in previous hearings that the reasons for the increase in the defense deflator are energy costs and scarcity of certain kinds of materials.

Mr. THUROW. Well, that's called bottlenecks.

Representative HAMILTON. I was going to say that is probably a bottleneck problem. It is a high technology business.

Mr. Capra, do you want to comment on this bottleneck problem and why you do not perceive it and Mr. Thurow does perceive it?

Mr. CAPRA. Well, there's a couple of aspects. First of all, as I said in the testimony, I don't believe that there really is a bottleneck problem at the present. Leadtimes, certainly in the aircraft and missile area, which is a large part of the buildup, have been coming down.

Now it's impossible for me to determine, and I think anyone to determine, outside of the Defense Department, what's going to happen down the road in 1983 through 1986. It's not at all clear that the increase in the electronics area would be more rapid than that line shown for procurement, because that information, frankly, is not available.

Now the Defense Department could, in fact, procure more spares and support equipment in the procurement line, rather than major end-items. In fact, between 1981 and 1982, $8 billion of the increase, the $20 billion increase in procurement, was for spares and support equipment. That will have somewhat different aspects than an increase in major weapons systems.

As far as the defense deflator is concerned, energy costs is one of the reasons why the defense deflator is higher than the GNP deflator. The other is that, especially in the aircraft, one of the primary materials used is titanium. Titanium and cobalt and chromium—those materials are obtained overseas from suppliers, from foreign governments, basically, that have essentially a monopoly on those items and can charge essentially what they want for them. That's not an item, those are not items that are common in the U.S. economy as a whole, and so prices that the United States has paid for those items—I think Mr. Borsting alluded to that in his testimony—have been higher than the prices we're paying for, say, steel or other components.

DOD UNIT COSTS

Representative **Hamilton**. Let me raise a question with you about these unit costs. I was talking to some of my colleagues this morning in the Defense Appropriations Subcommittee, and they were citing some absolutely incredible figures on what has happening to these unit costs.

I take it from your testimony that that is commonly known and is a source of very deep concern. Do you have any sense that we are attacking that problem in any very systematic, organized way? The Defense Department is going to testify in a few minutes that it is working at it. How are they working at it? What are they doing? What should they be doing?

Mr. **Capra**. I think Jacques Gansler, in his testimony——

Representative **Hamilton**. You like those suggestions he made?

Mr. **Capra**. Those 10 suggestions were among some of the things that clearly could be done to affect the unit costs.

Representative **Hamilton**. Why have we had this explosion in unit costs all of a sudden? Is that a long-standing problem? Has it become aggravated here in the last year or two?

Mr. **Capra**. It does become aggravated. It's almost like trying to target the deficit. The more you try to do something about it, sometimes the worse it becomes. In terms of unit costs, over the past couple of years, especially during the Carter years, as unit costs went up for inflation or other reasons, that created the need for more total defense funds.

Now with a lid or a ceiling on how much the country is willing to spend for defense or that the administration was willing to spend for defense, they needed to cut back, then, on the number of items to be purchased.

One phenomenon in defense is when you cut back on the number of items to be purchased, the unit cost, especially in the aircraft and missile area, tend to go up because defense contractors, and it's a well-known statistical relationship, have what's called a learning curve, where the more cumulative items that have been produced, the lower the unit cost should be.

And so when you go from 200 items purchased to 100 items purchased, you don't necessarily cut in half how much money you're spending. And so we're chasing our tail, in some sense. As you try to reduce the total defense budget by cutting back quantities of items, we end up increasing unit costs.

That's one of the most important phenomena. Some of the other phenomena are related to what Jacques Gansler mentioned—the lack of competition in follow-on bids, the lack of investment in——

Representative **Hamilton**. I know what he suggested, but I just wonder what is happening on them? All of his suggestions seem to make a lot of sense to me. I do not know a lot about this area, but it just seems to me almost apparent that we ought to be pursuing those suggestions very vigorously.

I would like to know whether or not we are doing it.

Mr. **Capra**. Well, the Defense Department probably can state what they——

Representative **Hamilton.** Don't you follow that pretty carefully?

Mr. **Capra.** I don't see it.

Representative **Hamilton.** You don't see them doing anything about it; is that it?

Mr. **Capra.** It's hard to see any comprehensive effort; clearly, no comprehensive effort that is yet yielding any significant results.

Representative **Hamilton.** Congressman Richmond.

Representative **Richmond.** Thank you, Mr. Chairman. Mr. Thurow, I am very happy to hear you say that even though we have inflation and historically high interest rates, you feel that we ought to really adjust our taxation and that that could possibly help the situation.

SHARE THE BURDEN BUDGET

As you know, I developed a budget which we call the Share the Burden Budget, which would cut $44 billion out of our deficit this year. It hasn't flown anywhere in Congress. No one is particularly interested in cutting. I think you're probably familiar with the budget.

Mr. **Thurow.** Right.

Representative **Richmond.** Excise taxes on cigarettes and alcohol; increasing the highway use fund—which hasn't been increased since 1954—with a tax on gasoline of another 10 cents a gallon, which would give us $10 billion to put back into building our roads and fixing our 177,000 unsafe bridges in the United States right now; and a whole series of user taxes which come up to the $44 billion figure, plus cutting out the consumer debt interest reduction, that sort of thing—except we would not eliminate the tax deduction for mortgage interest for your principal home.

Anyway, you agree, though, that probably the best way we could cut unit costs would be to cut inflation. The best way to cut inflation would be to do something to drop interest rates. The best way to drop interest rates would be to get the Treasury to start printing Treasury bonds; right?

Mr. **Thurow.** It would certainly help if the Federal Government was contributing a lot of savings to the economy as opposed to borrowing a lot of money.

Representative **Richmond.** In other words, a balanced budget in these times would probably be the greatest boon to the Defense Department that anyone could possibly develop; right?

Mr. **Thurow.** It would certainly help on some of these problems all right.

Representative **Richmond.** On the other hand, our administration policy is the exact opposite, isn't it?

Mr. **Thurow.** Yes; my basic position is that the strategy is just 90° wrong, if you want to look at it that way. And the defense thing makes it worse.

The peculiar thing about supply side economics as practiced by the Reagan administration is they took supply side economics, added $180 billion worth of military spending to it, and didn't change it one iota.

Now normally, when you put a lot of military spending into the system, you just have to change some of the other things that you're going to propose. This was a peculiar operation. The economic policies were invariant to adding or subtracting $180 billion worth of military spending. You don't get by with it in the United States. You don't get by with it in Europe. You don't get by with it in Russia. You've got to pay for $180 billion worth of military spending one way or the other.

Representative **Richmond**. Are we factoring in the fact that for the first quarter of this fiscal year, the Defense Department is operating under a continuing resolution and, in fact, their expenditures are not higher than they were last year? Have you figured out that at all in your calculations?

Mr. **Capra**. Well, that's not entirely clear that outlays would not be higher than last year, in the sense that even under a continuing resolution, that's for new budget authority. And so the outlays from prior year budget authority are on a trend line upward. So outlays, even under continuing resolution in 1982, would be higher than they were in 1981.

New appropriations, depending on how the resolution, of course, is structured, could be the same. But outlays, clearly, are going to be higher.

Representative **Richmond**. Well, certainly, the first 3 months or even more of this fiscal year will not see a serious increase in defense expenditures.

Mr. **Capra**. I wouldn't agree with that. You'll still see a significant increase. Most of the outlays in the first part of the year, aside from personnel outlays, which are fixed, are going to be outlays from prior year budget authority and those are on this trend line in the upward direction.

So a continuing resolution doesn't really hold down Defense Department spending in the first part of the year. It may have some minor effect on outlays later in the year or next year. It's this peculiar problem of the lags between budget authority and outlays.

THE INCREASING DOD UNIT COSTS

Representative **Richmond**. Mr. Capra, you were discussing the increasing unit costs. I think the basic reason for the increase in unit costs in the United States is our lack of productivity due to the lack of capital investment in many of our factories. Our factories, as you know, are in miserable condition. I've seen it as I've traveled around the country looking at plants. Compared to the Japanese factories, we're like 25 years behind. I believe that, of course, is contributing more to high unit costs than anything else in our entire defense spectrum. Certainly not in computer factories. I'm talking about the basic forging plants, the basic machine tool factories. They're as antiquated now as I've ever seen them in modern times.

I believe we've got to do something to get to the heart of inflation, to get at the heart of interest rates, in order to get manufacturers to start retooling their factories because the only way we're ever going to get more productivity out of our workers is to give them better machine tools to work with.

Mr. **Thurow**. Let me just make a point.

Representative RICHMOND. Yes.

Mr. THUROW. If you think of everything from that point of view, I think it tells you that you're on the wrong course in terms of economic policies because it was just reported in the press a day of 2 ago that machine tool orders are down 50 percent over last year.

Representative RICHMOND. Which mean that the average manufacturer can't afford to buy new machine tools because of high interest rates.

Mr. THUROW. And if you think of reindustrializing the economy, what we are now proposing to do just isn't going to do it.

Representative RICHMOND. Unless we reduce inflation and reduce interest rates by balancing the Federal budget and by taking such other actions as may be necessary; right? There's no way you're going to reduce your unit cost, Mr. Capra, unless we can increase productivity; correct?

Mr. CAPRA. I would agree with that.

Representative RICHMOND. All right. There's no way that you're going to increase productivity—because let's face it, the American worker is every bit as good as any worker in the world—there's no way you're going to increase productivity without giving the American worker better machine tools to work with and better tooling in general to work with. That costs money. And there's no way that the average manufacturer can raise that money at 18 and 20 percent interest. He can't afford it.

So we're caught in this devilish circle. It seems to me that Mr. Thurow's idea is the best of all. We've really got to raise selectively certain taxes and cut Government expenditures and start balancing the Federal budget. That's the quickest way to drop inflation, drop interest rates, and retool the United States.

That's where you're going to get your reduction in unit costs.

Mr. CAPRA. Well, that's clear. The Federal share of credit has been growing and is large. If the Federal Government's activity in the credit markets, as far as borrowing, were lower, there's every expectation that it would certainly improve the situation. I would agree with that.

ADEQUATE ARMED FORCES MORALE AND TRAINING

Representative RICHMOND. I've heard so much about the need for readiness items, that we're very short on just basics—not only short on morale builders for our Armed Forces, which seems to me much more important than missile systems—in other words, if we don't have an Armed Forces complement of 2 million people with adequate morale and adequate training, what good is it to have any modern missiles? They can't use them, anyway, right?

What I've heard so far is that the living conditions, the educational conditions, the health conditions of our military personnel are terrible, and that in many cases, we're short of just basic ammunition. In our forward base in Germany, our pilots don't get anywhere near as much training as the Israeli pilots because of the shortage of fuel.

These aren't major weapons systems; there are just basic materiel which, certainly, I think anyone would want to make sure that we have enough of. And apparently we don't have enough.

Is that true?

Mr. **Capra**. That appears to be correct, Congressman. In fact, one of the dangers or the problems that Defense is facing is that with the call for budget cuts in the defense area, it's difficult to cut out entire weapons systems. Consequently, the temptation is to cut out the things that you can't measure very well, and that's these readiness items, the base support, and to scale back purchases of weapons systems which drive up unit costs.

If defense is to be cut, there's sort of a right way and a wrong way to do it, and the wrong way would be to scale back readiness items, I believe, and to scale back the numbers for weapons systems rather than just eliminating some.

Representative **Hamilton**. Gentlemen, I'd like to keep you for a few minutes more, unless you have appointments. We do have to vote here. So we will stand in recess for a few minutes and then come back and continue the questioning for a few minutes more.

[A brief recess was taken.]

Representative **Hamilton**. The subcommittee will resume its sitting.

A NATIONAL DEFENSE EDUCATION ACT

Mr. Thurow, are you talking about a new National Defense Education Act of some kind to deal with this problem of supply of skilled workers? Do you think that the Federal Government ought to launch into a major training program?

Mr. **Thurow**. If you take it all seriously and say that we need to do what's being proposed, then you're almost forced to say something positive ought to be done on the manpower training side. I think there are a couple of areas where there are very serious weaknesses at the moment.

One is in this whole question of scientific education. If you assume that there's going to be a big demand for engineers—there is a big demand at the moment and there's going to be a greater demand over the next 5 or 6 years—then you just can't let scientific education collapse.

I don't know about every place else in the country, but recently, the Boston Globe had a story that there were 27 high schools in Boston that didn't have a teacher of physics. Anybody capable of teaching physics can get a better job than being a high school teacher in this day and age. But if nobody's teaching physics at the high school level, then obviously, you don't have any physicists some distance down the future.

That hasn't started to hit a place like MIT yet, but it's starting to hit a lot of the liberal arts colleges and places like that where they also can't hire and keep scientific manpower.

So I think that's a key issue. The other key issue is really the question of training skilled blue collar workers. That's something that has been made worse because of our economic performance of the last 5 years. We traditionally train a tool and die maker or a machinist in the United States by doing on-the-job learning. When demand is expanding, you train people. And as job opportunities open up, you filter the people into them.

But we have had very low increases in output over the last 4 or 5 years. So if you look at the proportions of the population that have those kinds of skilled blue collar skills, it is much lower than it used to be because we've basically been out of the training business for a number of years. The economy wasn't growing rapidly enough to demand training.

Representative **Hamilton**. The point is you see this as a Federal Government role in the areas of both scientific education and the training of skilled workers?

Mr. **Thurow**. I would point out two things. First of all, in past military buildups, it has been a Federal role. Secondly——

Representative **Hamilton**. We have actually in the past done a lot of the training of tool-and-die makers and all the rest?

Mr. **Thurow**. Well, in World War II, the Government took lots of actions to speed up that kind of training and to simplify jobs so that you didn't have to do quite so much training. That's not something that happens by itself. The States are very reluctant to put up the money for that kind of thing because people in Michigan say, hey, we're going to train a tool and die maker and they're going to move to California. Therefore, the State of Michigan shouldn't pay for it.

Representative **Hamilton**. Those are very costly programs.

Mr. **Thurow**. Oh, absolutely. But if you're going to do something costly, build a lot of military hardware, you've got to have the people to build it. It isn't going to happen by itself.

DEFENSE INDUSTRY LEADTIMES

Representative **Hamilton**. Now Mr. Capra argues that on this bottleneck question that we have discussed, the leadtimes in the aircraft industry have been decreasing in the past year or so and that the quantities that we are actually purchasing are not increasing. The cost is going up, but the quantities are not going up.

He concludes, I think in part on the basis of that, that you are not going to have these kinds of bottlenecks that you talked about.

Mr. **Capra**. Well, at present, you can't tell what will happen in 1983 to 1986.

Representative **Hamilton**. I understand that, but at the present time.

Mr. **Thurow**. The fact that the leadtimes are falling slightly is due to the fact that you have an economy that isn't growing. The question you have to ask yourself is if the economy were actually growing, what would be happening to those leadtimes.

Leadtimes for everything fall when you have a recession. Even in the computer business at the moment, people tell me that their back orders are getting soft, in the sense that some people who are on their order books to get computers would like to get off their order books before the computers arrive because the GNP is falling and they just don't need things.

So the fact that leadtimes are falling at this moment I don't find surprising and I don't think that you can use that as very hard evidence that if we had a military buildup, and remember, we haven't had any yet in terms of the Reagan budget, that you wouldn't quickly get into the bottleneck problem.

I think the real bottleneck problem, too, comes down to the level that was mentioned in your early testimony—not at the level of

Boeing, but at the level of suppliers to Boeing, the third tier of contactors where in some of these things you really have a problem.

In some areas, we technically know there are bottlenecks, like on producing more tanks. The forging places that can produce those kinds of forgings are just running at capacity and there just is a limited capacity to speed those kinds of things up.

Representative **Hamilton.** Mr. Capra, you wanted to comment?

Mr. **Capra.** Yes; at the moment, of course, even those forging leadtimes are dropping, possibly because of weakness elsewhere in the economy. I mean, the producer of the M-1 tank, the prime contractor is Chrysler. So the weakness in all of production from the prime contractors and from what they're demanding very well could be affecting the leadtimes.

I'd like to insert a few pieces of information on this question of engineers and supply of engineers. That's an area where we really don't have a lot of data, but there's a little bit of data. The Defense Department had earlier last year done some analysis of what they thought the requirement in terms of engineers might be based on some alternative scenarios for the defense budget.

Now at that time, they did an analysis looking at what would happen with 5 percent real growth in the budget? Of course it's larger than that. But what would be the demands—they have a model they were working with—for new scientists?

They came up with an estimate essentially saying that defense now employs, or defense supported programs employ roughly 118,000 scientists and engineers. And under their estimates, by 1985, with 5 percent real growth, you'd need another 37,000 in order to satisfy the demands.

Now by contrast, in 1978, the National Science Foundation estimated that 90,000 individuals graduated with scientific and engineering degrees, excluding social scientists and life scientists.

Now it's not clear whether that graduation rate would continue, but the country is producing—now whether that will go down—but the country is producing a number of scientists. There is some data around and possibly Mr. Borsting can comment more on that data, as to what the demands might be for scientists and engineers.

Mr. **Thurow.** Of course, this is the place where you see the bottleneck at the moment in the rapidly rising wages. There are shortages. People in the electronics business will tell you, we cannot hire at Texas Instruments as many engineers as we would like to hire. And you can also see it if you look at what's happening to the wages of engineers. We're at the bottom of the cycle because of the cutbacks in the early 1970's. In the early 1970's, 1972, and 1973, there was a period of time when engineers were in surplus supply, people decided not to get the scientific background, not to become engineers, and 7 or 8 years later, you have a cyclical downturn in the supply of engineers.

That's what we're essentially experiencing at the moment.

So if you look at starting salaries, say at MIT, for new engineers, they were exploding upward at the rate of about 30 percent a year last year. That tells you there's something up there in the system and there's a shortage, or people wouldn't be paying a new BA engineer 30 percent more this year than they paid them last year.

INFLATION DURING VIETNAM BUILDUP

Representative HAMILTON. On the inflation question, is it possible that we will see develop a real surge of inflation like we had a year or two after the Vietnam buildup.

Do you see that, Mr. Capra? I take it that you do not.

Mr. CAPRA. No.

Mr. THUROW. I don't think that you're going to get a rapid surge, either, because you didn't get it in Vietnam. If you go back and look at it——

Representative HAMILTON. Well, a lot of our economic troubles are always attributed to the fact that during Vietnam, we fouled up the financing of the war.

Mr. THUROW. Well, see, I think that's absolutely right. But you didn't get the kind of surge that people remember. What you had is you started off with 1½ percent inflation and it went up by about a percentage point a year.

It was very slow and very consistent and very prolonged, but there were no great jumps in inflation, let's say, from 1 to 9 or anything like that in the Vietnam war. It was just 1 percent a year that we added on to the top of what we had. We started off at 1 and we ended up at the end of the war with something like 6. But there wasn't a great surge and I think that that's the kind of thing you expect to see here, just like of slow, persistent upward pressures on the entire system.

FEDERAL RESERVE'S ACCOMMODATION OF THE INCREASE IN DEFENSE SPENDING

Representative HAMILTON. Has the Federal Reserve accommodated the increase in defense spending in this year, and would you expect it to accommodate the increase in defense spending coming down the road here, Mr. Capra?

Mr. CAPRA. Well, the Federal Reserve now operates under a reserve targeting mechanism, a reserve targeting procedure started in October of 1979, that, by and large, is supposed to not target and does not target interest rates.

The way you supposedly tell whether accommodation is taking place is whether the Federal Reserve is attempting to, despite increases in Government debt, is attempting to keep interest rates within a narrow band. That procedure—it's not clear whether it was ever followed—but it clearly has not been followed since October of 1979.

It's difficult to measure the question of whether the Federal Reserve accommodates or doesn't accommodate because there are lots of other things happening in the economy. But by and large, what's happening to the Federal deficit and whether money should be increased because of that is not one of the factors that's involved in the current operating procedures.

BUDGET DEFICIT PROJECTIONS

Representative HAMILTON. Mr. Thurow, I would like to get you to comment on your projections on these deficits in the years 1982, 1983, and 1984. You see this enormous stimulus. I think you put it at $680 billion or so. What is going to be the impact, then, on the deficit of the Federal budget?

Mr. THUROW. There is one misprinting in my prepared statement. It should be $260 billion, if that's what you're referring to.

Representative HAMILTON. Yes.

Mr. THUROW. Basically, in terms of the budget deficit, I'm in the ball park with most other people. If you look at what's apt to happen to the economy and to the Federal projections, I see something like $100 billion deficit in 1982. And if you assume that you don't have any tax increases coming down the line after that, I think you see those kinds of deficits even growing in the future.

Representative HAMILTON. Well, I think we have another witness and we have kept him waiting quite a long while. Gentlemen, I am sorry for the interruptions this morning. We appreciate your testimony very much. It is nice of you to be with us. Thank you.

Mr. Borsting, come to the witness table, if you would, please, sir.

The Honorable Jack Borsting is the Assistant Secretary for Defense—Comptroller, having been appointed to that position in August of 1980. Previously he was Provost and Academic Dean at the Naval Postgraduate School in Monterey, Calif.

Secretary Borsting, we did not plan it this way. As you know, we had hoped that the Department of Defense would appear earlier in these hearings. We did, in fact, invite the Department of Defense to be our first witness.

At the same time, it may work out for the best that you are the final witness in this series of hearings. We now have the benefit of the testimony we have had from a wide range of witnesses, as I have already indicated. And some of their testimony, of course, will form the basis of my questions to you.

You have your prepared statement, which, of course, will be entered into the hearing record in full, and you may proceed, sir, with your comments.

STATEMENT OF HON. JACK R. BORSTING, ASSISTANT SECRETARY OF DEFENSE—COMPTROLLER, ACCOMPANIED BY JOHN W. BEACH, DIRECTOR FOR PLANS AND SYSTEMS, OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE—COMPTROLLER; AND JOHN A. MITTINO, DIRECTOR, MATERIAL ACQUISITION POLICY, OFFICE OF THE DEPUTY UNDERSECRETARY—ACQUISITION POLICY, OFFICE OF THE UNDERSECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING

Mr. BORSTING. Thank you very much, Mr. Chairman. It is, indeed, a pleasure to testify before this subcommittee for the first time. It's also probably a good time to be the cleanup hitter. It's never bad to be batting in that position.

I'd like to mention that I have two people with me: John Beach, who is my principal economic adviser; John Mittino, who is in the Office of the Undersecretary for Research and Engineering and whose specialty is in acquisition management.

I will not go over my prepared statement in detail. I would just like to highlight a few points. The first point is that I believe that the increased defense spending that we projected for the next 5 years will not significantly inflate the economy or be a detriment to the economy, and I've indicated some of the reasons in my statement.

Also with regard to the defense budget, we are working on the 1983 budget and we will be submitting the 1983 budget in January. The President will submit that. That will also firm up our 5-year plans.

Mr. Capra mentioned that he did not have data. At that time I think the data will be available then, when the President submits his 1983 budget.

The next section of my prepared statement is about the Department of Defense's budget as a percentage of GNP. I don't really think that I need to go over that in detail. Mr. Weidenbaum talked about that as did several of the other witnesses. You do have a chart on the right which talks about GNP—defense as a percent of GNP [indicating]. It points out the peaks and the valleys with the Korean war and the Vietnam war. My chart goes back further to 1950.

The main point of the chart is that from a macro sense, we're not increasing as a percentage of GNP as much in the next 5 years as has happened in the past when we have had big buildups.

I have also included in my prepared statement other charts—percent of defense spending with regard to total Federal spending and other measures that show basically the same thing, as you'll notice.

The next section of my prepared statement talks about the impact of the defense buildup on inflation. I'd like to make several points here. One, it's a two-way street. Inflation certainly affects the defense budget and the defense budget may affect the economy. Inflation in the defense sector has been higher than in the general economy in the past, not so much as a result of added pressure from increased defense expenditures, but rather, by economic factors peculiar to defense.

Now Mr. Capra discussed that some of these factors have been rising energy costs, which are not bottlenecks at all. This has had a significant effect in defense inflation.

Also, high prices from foreign suppliers impact defense inflation. I would not consider those items as a bottleneck, but they have contributed to the inflation. The combined effect of these factors and some bottlenecks, together with the high technology state of much of the defense industry has caused inflation in the defense industry to be higher than the GNP implicit price deflator.

In the next section, I discuss the impact of defense growth. I'd like to point out that we've been doing several things with private economic forecasters. Last fall, we had a symposium where five independent defense forecasters had two scenarios—one of slower defense growth, one of larger defense growth. The larger scenario was 10 percent for the next 5 years on outlays, 10 percent real growth, based on certain reasonable assumptions that the growth occurs in a sensible fashion. All forecasters said that they did not expect a big increase in inflation under sensible scenarios.

Let me comment also about some charts that Mr. Capra discussed. First, the chart on procurement budget authority that you have on the left [indicating].

I should mention that this chart is in budget authority and not in outlays. There is a significant lag in outlays on defense expenditures. So that's not really a true picture of defense buildup.

For example, in procurement shipbuilding, we'll only spend out 2 percent the first year, and it takes many years to spend out. Also, the gross national product was much lower in the Vietnam era than it is now. So we're operating from a much higher state of the economy. And the denominator in each of the graphs would change and that would lower any gap on the two procurement lines comparing the Vietnam buildup with this buildup.

I mentioned we have been working and will continue to work with private economists. We're having this fall private meetings with industry, with economic groups, and with the financial community. We're using macroeconomic models and models of the effects of defense spending on the economy. We're trying to get industry's view so that we'll prevent bottlenecks or price increases in this projected defense buildup over the next 5 or 6 years.

We're scheduling these meetings this fall on a selected basis with different small segments of the economy, but very important segments for defense.

The last section of my testimony discusses the industrial base. It's my overall feeling and the economists that work for me that the expected expansion of military procurement will not overload industry so long as the expansion is well anticipated at the industry level and appropriate measures are taken.

Now certainly, there are leadtimes in the aerospace industry that are currently showing improvement, as the commercial modernization effort slows and defense work receives increasing priority. That's helped our problem recently. There are clear indications that industrial capacity does exist and that in certain areas such as forging capability, additional capability has been readied.

We believe that the time phasing of our major programs is such that with prudent attention of both Government and industry in these particular areas, we will be able to produce.

Our major concern, as you know, is to the subcontractor base. I think Jacques Gansler discussed many of the problems about the subcontractor base and I would agree with many of the problems that he indicated in his testimony.

We are working hard to stimulate interest at the Department of Defense at that level and to assure that our prime contractors pass down the acquisition improvements to their subcontractors. In addition, we are encouraging new entries into the defense market for people who are generally not in the defense marketplace. We are also encouraging existing defense contractors to add capital as required to meet growing requirements due to higher levels of defense spending.

We have also been working with the Congress to stimulate legislative reform that will enable us to operate more efficiently; for example, multiyear contracting, which has been proposed to both authorizing committees and to both appropriations committees.

In general, we are striving to have the defense buildup to be stable and predictable so it will have a very minor effect on the industrial base and so that it will not greatly contribute to inflation in the overall economy.

Mr. Chairman, I have just summarized some of the highlights of my prepared statement and I would be happy to answer questions.

Thank you.

Representative HAMILTON. Thank you, Mr. Borsting.

[The prepared statement of Mr. Borsting, together with the graphs referred to, follows:]

PREPARED STATEMENT OF HON. JACK R. BORSTING

Dear Mr. Chairman and Members of the Committee:

I appreciate the invitation to appear before you today to discuss Defense spending and the economy. The topic is most relevant at a time when the Administration is committed to modernizing and upgrading the military resources of the United States and at the same time cutting back total Federal spending in order to bring the budget into balance. The topic is also one that is often misunderstood. There is a great deal of concern that the vital steps required to improve the state of our national Defense will, in the process, destroy the state of the economy by increasing inflationary pressures, causing bottlenecks in industry, and competing with the private sector for a shortage of skilled manpower. We believe these concerns are exaggerated. There likely will be certain areas where current bottlenecks in the Defense industry will occur; where inflation may continue at a higher rate than in the non-defense sector; and where competition for skilled technicians will be intense. But we believe the nature of this buildup is sufficiently different from prior buildups -- largely associated with war -- so that the U.S. economy will be able to absorb this Defense buildup without major disruption and upheaval.

Defense Budget

We are now formulating the Fiscal Year 1983 budget and, as part of that process, revising the Five Year Defense Program (FYDP). The budget process will be completed in late December and the FY 1983 Defense budget will be released by the President to Congress next January. The adjustments which the Department has recently been asked to make as part of the reductions in total Federal spending do not signal a change in our military requirements, but rather a need to achieve them under more stringent fiscal restraints.

The President, as you are aware, has called for Defense to reduce FY 1982 spending by $2 billion and by $11 billion for the following two years from the levels established this past July. We have presented to the Congress proposals to accomplish that goal.

DoD as Percentage of GNP

The five-year projection of DoD outlays will average 6.3 percent of the GNP increasing from 5.7 percent in FY 1982 to 7.0 percent in FY 1986. The cumulative increase over the FY 1982 level is approximately $150 billion. The real increase, after adjustment for inflation, is about $80 billion in FY 1982 dollars.

As with outlays, the GNP percentages can be reviewed in a historical perspective. These trends do not prove that the Defense budget is too high or too low, or that we are better or worse off in a military sense than at some time in the past. Defense certainly is not entitled to any specific share of public spending or of GNP. Nonetheless, these comparisons provide a historical perspective that will assist in assessing the future.

In 1945, at the end of World War II, DoD outlays were 35.3 percent of GNP; in 1946, they declined to 19.9 percent and by 1950, were 4.4 percent of GNP, averaging 4.6 percent for the years 1947 to 1950. The peak Korean War percentage of 12.1 percent was reached in 1953. From 1956 to 1964 the DoD outlays ranged between 8.0 percent to 8.6 percent of the GNP and in 1965 reached a 14 year low of 6.9 percent.

In 1968, during the height of the Vietnam involvement, DoD outlays reached 9.3 percent of GNP, the highest since the Korean War era. DoD outlays dropped to 8.5 percent of GNP by 1969 and by 1979 had reached 4.8 percent, the lowest DoD percentage of GNP in 29 years.

The decline was reversed in 1980 with outlays reaching 5.1 percent of GNP and we expect that by 1986, DoD outlays will be approximately 7.0 percent of GNP. In a historical perspective, 7.0 percent of GNP does not appear excessive.

Impact of Buildup on Inflation.

Inflation has had an immense impact upon the Defense budget in recent years, but this impact is by no means peculiar to Defense. It has been an economy-wide phenomenon, affecting our family budgets and expenses as well. Inflation in the Defense sector has been higher than in the general economy, not so much as a result of any added pressure from increased Defense spending, but rather by economic factors peculiar to Defense.

Rising energy costs have a more pronounced affect on Defense because DoD is more fuel intensive than the general economy and dramatically more so than the rest of government. Scarcity of certain critical materials, some of which are only available from monopolistic suppliers outside the United States also bid up Defense prices. Recent, and large price increases have been experienced in titanium, specialty metals such as cobalt, nickel, and chromium, and to an extent, aluminum, as well as large castings and forgings made from those raw materials. The combined effects of these factors, together with the high technology state of much of the Defense industry, have caused inflation in the Defense sector to be higher than the GNP implicit price deflator.

Inflation guidance provided to Defense is based on changes in the GNP deflator. As a result, Defense acquisition programs which are based on a full funding concept always have some risk of not being priced properly. A Defense program that is appropriated in FY 1982 may not be completed for several years. Yet it must be priced based on inflation rates currently projected for future years.

Impact of Defense Growth

The Department of Defense frequently confers with private consulting firms to assess the impact of higher levels of Defense expenditures on the U.S. economy. For example, in October last year, well known economists representing Wharton, Data Resources, Inc., (DRI), Evans Economics, Chase Econometrics, and Merrill-Lynch participated in the annual DoD Cost Analysis Symposium. This group concluded that a 10 percent real growth in DoD outlays over the period 1981-1986 would not be inflationary if there were a carefully planned, progressive increase in government purchases. The forecasters also agreed that current U.S. production capacities are generally adequate to accommodate the increased demands generated by the accelerated Defense spending.

There are no sudden, dramatic increases in the planned buildup for 1981-86, so the inflationary expectations normally built into such explosive expansions are missing from the current five-year economic forecast. Past Defense buildups, and especially the Vietnam buildup, involved rapid reallocation of resources to the Defense sector with little or no compensating adjustments in taxes or reduced spending in other parts of the budget.

We are continuously working with industry groups and representatives to alert them concerning what we believe will be the future demand for defense goods and services in their respective industry sector. At the same time we are checking to see what excess production capacity exists and what the consequences would be if further demand were placed on these sectors. I do not believe all bottlenecks can be prevented; nor do I believe that some economic dislocation will not take place, but I do believe we are in a much better condition to assess the economic pulse of the private sector, as it relates to defense needs than we have been able to do before.

During the 1950-53 buildup, the DoD percentage of the GNP increased from 4.4 percent to 12.1 percent. The sharpness of that buildup was indicated by a 40 percent average annual increase in the proportional DoD share of GNP. An increase from 7 percent in 1965 to 9.3 percent in 1968 was much less sharp, as it amounted to only a 9.9 percent average annual rate of increase in the proportional DoD share of GNP. The currently planned buildup is gradual in comparison to prior periods. The increase in the DoD percentage of GNP is less than one-third as sharp as the increase in the 1965-68 period.

The currently planned buildup is also compensated by planned fiscal actions to offset the economic effects of the higher rates of Defense spending. Excluding National Defense, the Mid-Session Review for Federal Budget Authority for the five-year period 1982-86 provides about 2.2 percent annual decline in real growth, i.e., after inflation. The programmed decrease in non-Defense spending will help accommodate adjustments to the Defense buildup within the economy. If appropriate fiscal and monetary measures are followed and if the Department of Defense can remain on a steady but upward budget course, I believe the currently proposed defense program need not cause serious economic difficulties.

The leadtimes necessary to increase Defense procurement of major weapon systems and other investments in Military Construction and R&D result in gradual effects on the economy. The current buildup in Defense investment is in sharp contrast to the Vietnam buildup in manpower which had a more immediate effect on the economy. The spendout of investment programs differs among accounts with most of RDT&E program spending over a two-year period while 55 percent of a shipbuilding program will spend in the fifth year or later. These spending profiles are very important, not only because of the gradual way that they impact the economy, but also in understanding the controllability of outlays. Increases in DoD outlays will lag the currently planned increases in Defense programs (Total Obligational Authority).

These outlays relate to obligational authority of several prior years, as well as that of the current year. For example, in FY 1982, 30 percent of the $181.8 billion dollar outlay result from funds approved in prior years. These unexpended balances are not the result of an inability to spend the money. Rather, they are associated with research, acquisition, and construction projects which take more than one year to complete. In essence, they are the portion of our noncurrent liabilities from the prior year which are reclassified as current liabilities this year. An understanding of this relationship between TOA and outlays is fundamental to controlling expenditures in any given year or time period.

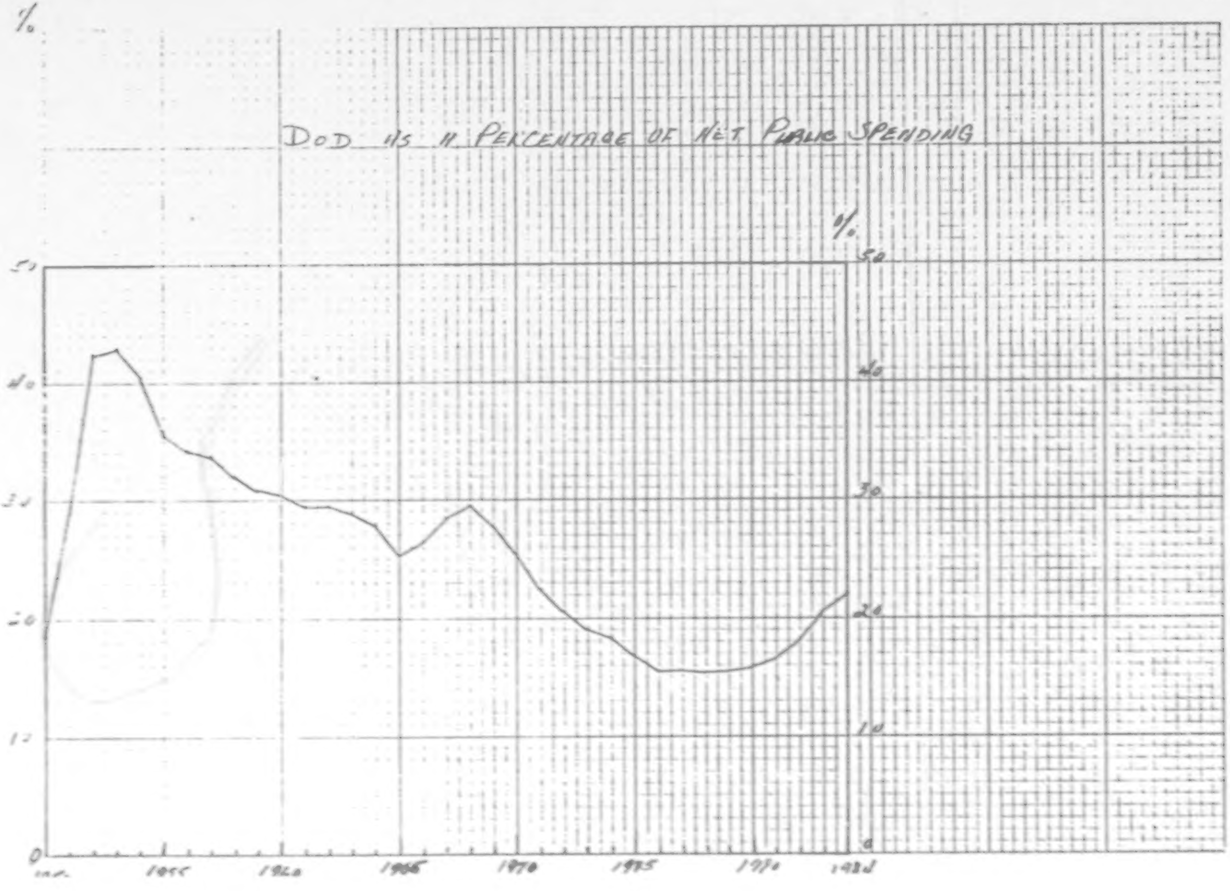
Industrial Base

The expected expansion of military procurement will not overload industries so long as it is well anticipated at the industry level and appropriate compensatory measures are taken. The U.S. does have the industrial capability to absorb the planned increase in Defense spending, provided we continue to pay close attention to the areas which have typically affected production. Our assessments show that materials and manpower availability, particularly for engineers and skilled workers, will require attention to ensure that problems are solved as they occur. Without this it can be expected that leadtimes will be long, resulting in increased hardware costs and reduced readiness. Leadtimes in the aerospace sector are currently showing improvement as the commercial modernization effort slows and Defense work receives increasing priorities. There are clear indications that industry capacity exists and that in certain areas such as forging capability, additional capability has been readied. We believe that the time phasing of our major programs is such that with prudent attention by both government and industry in these particular areas, we will be able to produce them. Our major concern, as you know, is the subcontract base. We are working hard to stimulate interest in DoD at that level and to ensure that our prime contractors pass down the acquisition improvements to their subcontractors. In addition, we are encouraging new entries into the Defense market for figures not generally in the Defense market place. We are also encouraging existing Defense contractors to add capital as required to meet growing requirements due to higher levels of defense spending.

In mid-1981, the average rate of capacity utilization for manufacturing industries was about 78 percent. Both the materials industries and the primary and advanced processing industries currently are operating with about 20 percent idle capacity. DRI projects that these utilization rates will move above 90 percent by the mid-1980's.

Plans to shift to greater reliance on multiyear contracts will provide a significant step toward efficiency and an insurance against bottlenecks. This change in the major systems acquisition process facilitates industry adjustments to a stable five-year Defense program, as opposed to having to react to major year-to-year shifts in Defense procurement.

I have enclosed to my statement several trend lines which show DoD spending as a percentage of budgetary and economic aggregates. The point that I make and, one that is clear from the charts, is that the currently planned Defense buildup will not have as much impact on the budget or the economy as those experienced in earlier periods.


DoD AS A PERCENTAGE OF NET PUBLIC SPENDING
%
50
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30
20
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1950
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1960
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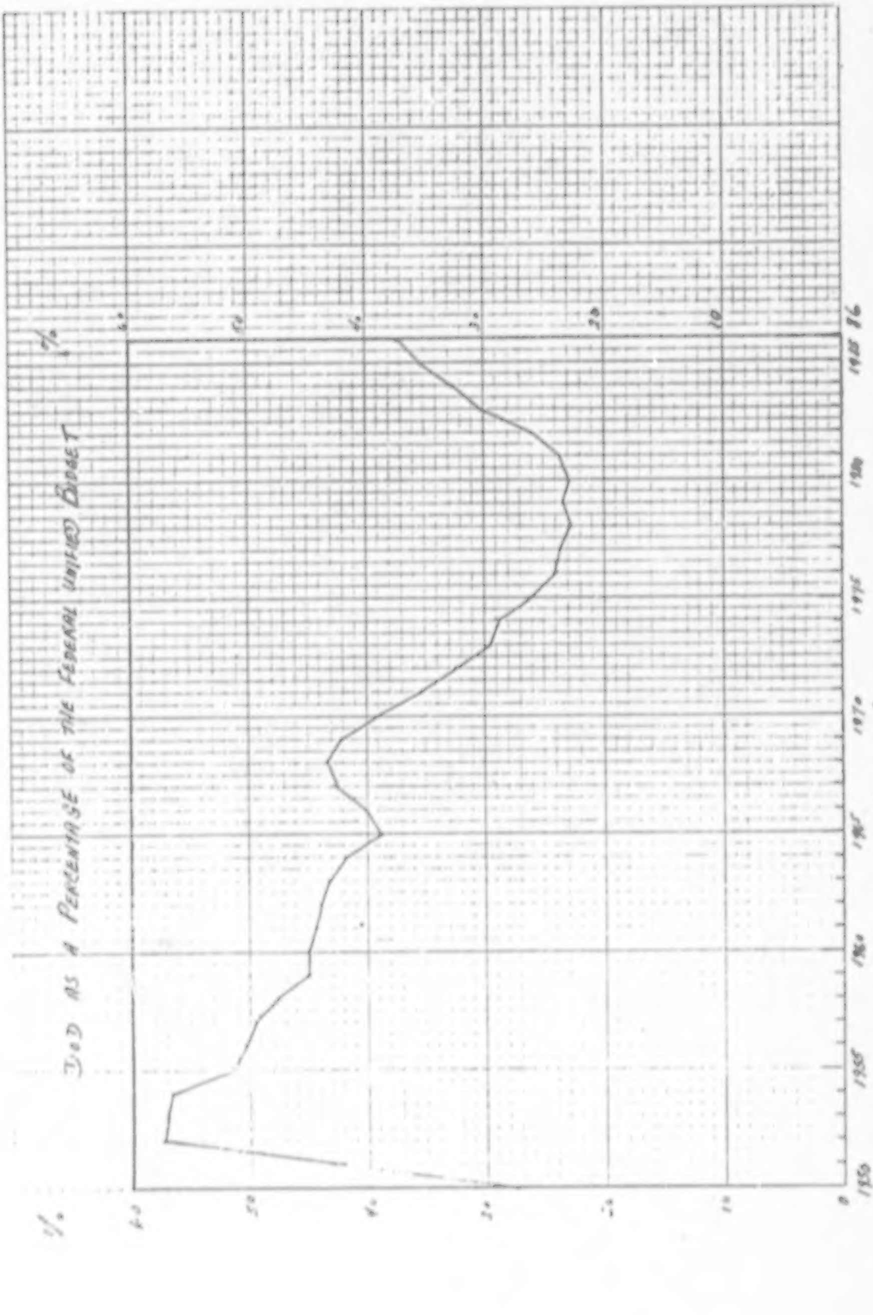
DOD AS A PERCENTAGE OF THE FEDERAL UNIFIED BUDGET
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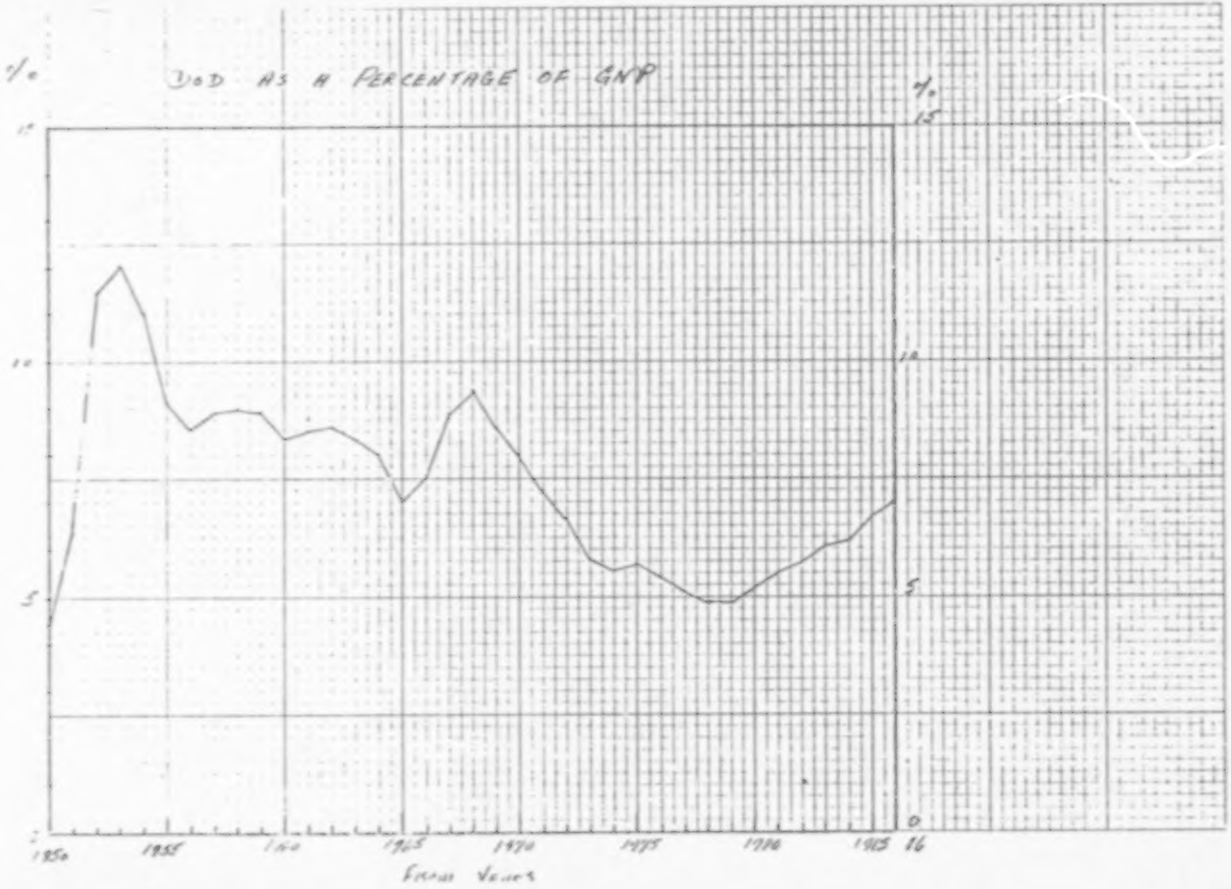
FISCAL YEARS


DOD AS A PERCENTAGE OF GNP
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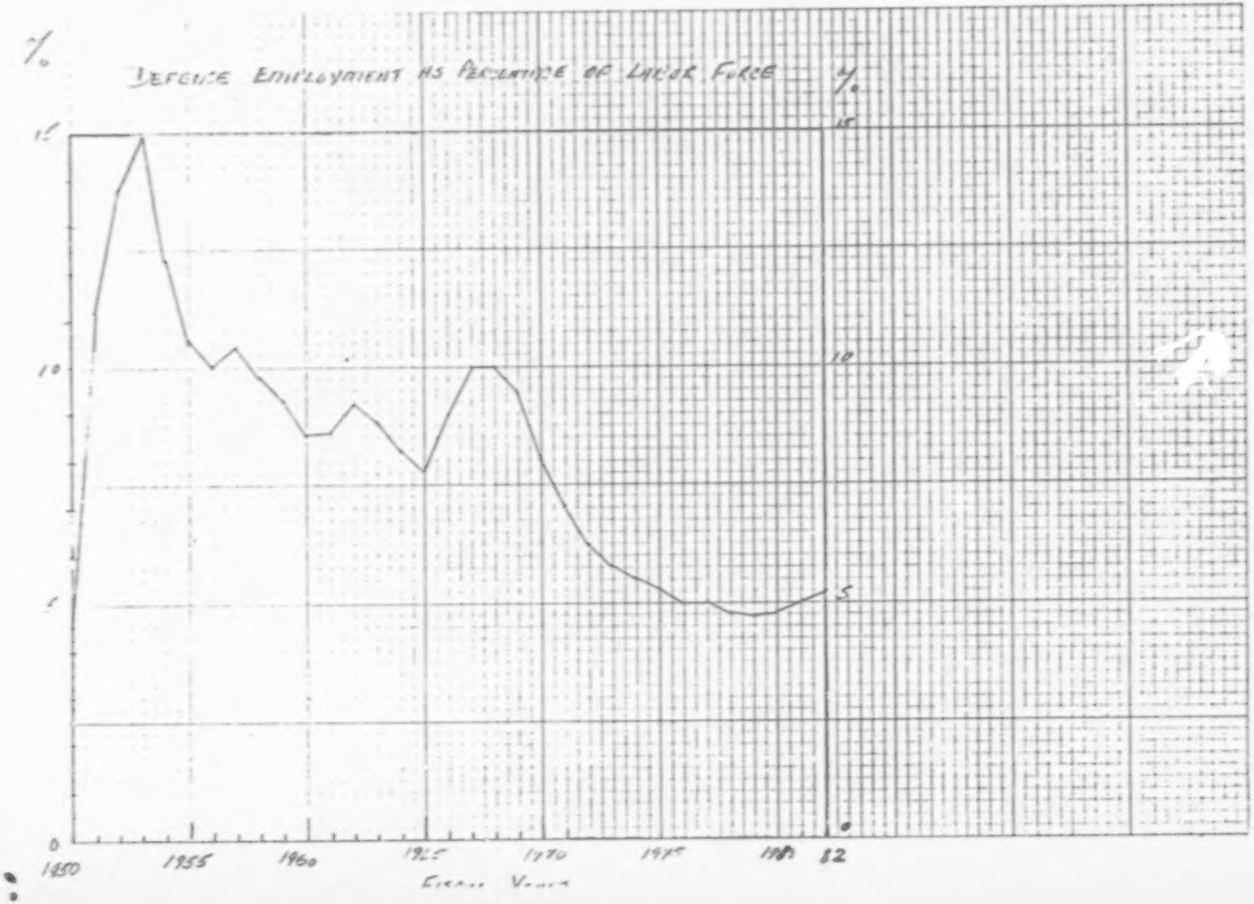
86
Fiscal Years



DEFENSE EMPLOYMENT AS PERCENTAGE OF LABOR FORCE

Representative **Hamilton**. Mr. Borsting, what is your comment about Mr. Thurow's observation that President Reagan is making the same mistake, in effect, that President Johnson made during the Vietnam period when he sought guns and butter, only in the case of President Reagan's program, the butter is the tax cut? How do you respond to that?

Mr. **Borsting**. Well, I disagree with Mr. Thurow. We are in a different environment, as Mr. Weidenbaum testified. The buildup is slower. The tax reform will stimulate capital investment and I hope stimulate, therefore, productivity.

It was discussed earlier in the question period that we definitely had a problem with capital investment in the defense industry and industry as a whole. I would agree with that. I think the tax reforms will stimulate investment.

So I do not agree in general with Mr. Thurow.

Representative **Hamilton**. What about the argument he makes that the industries where the military equipment is actually produced are booming, their production capacities are up and so forth, and the shift of resources into the military industries will weaken the civilian sector severely? I think he identified that, really, as the most severe problem that he saw in the military buildup.

Mr. **Borsting**. Yes, and Mr. Capra didn't agree with him.

Representative **Hamilton**. Yes.

Mr. **Borsting**. I think you were pointing out earlier that you've had great conflicting testimony from various witnesses on this point. Let me give my own view.

EFFECT OF THE DEFENSE BUILDUP ON THE CIVILIAN ECONOMY

I do not think the defense buildup will affect the civilian economy. I would support Mr. Capra's position. There certainly will be certain areas that we might have some problems in the defense industry. That's why we're working with industry to anticipate these problems.

WEAK SPOTS IN THE DEFENSE INDUSTRY

Representative **Hamilton**. Can you identify those areas for me? Where do you think the weak spots are going to be?

Mr. **Borsting**. Well, certainly, in certain areas, for example, forgings, we have problems. The overall situation has improved, but we've had problems in the past. We are working to stimulate the subcontractor base in areas where we may have future problems.

Representative **Hamilton**. Are there other areas that come to mind?

Mr. **Borsting**. Let me turn the question over to Mr. Mittino and see if he has any extra items.

Mr. **Mittino**. Yes, Mr. Chairman. These so-called bottlenecks have been evident to us for quite a while. They're nothing new, as a matter of fact. Even in the normal course of our business, we experience bottlenecks, in terms of not so much technical and skilled manpower, as was discussed this morning, but more in terms of capacity of a plant and generally in terms of scarcer critical materials.

Now the examples you ask for include, for example, certain castings and certain types of forgings. I might say that although the world recognizes forgings as a capacity constraint and a bottleneck, one has to look at the size and kind of forgings and whether or not they're made with titanium. The answers all come out different, I might say.

Other areas include particular types of precision bearings, certain germanium, K band, traveling wave tube, and some electronic devices.

These are sort of a sampling of the types of commodities experiencing bottlenecks.

Representative HAMILTON. Do these problems worry you more than the manpower problem, the lack of the skilled craftsmen that was discussed earlier?

Mr. MITTINO. I would have to say, Mr. Chairman, that they do not worry the Department of Defense any more because they are very severe problems both in their own right.

Representative HAMILTON. Including the skilled manpower problem.

Mr. MITTINO. Yes.

Representative HAMILTON. What do you do to deal with that kind of a problem?

Mr. MITTINO. On the skilled manpower?

Representative HAMILTON. Yes.

DEALING WITH THE SKILLED MANPOWER PROBLEM IN THE DEFENSE INDUSTRY

Mr. MITTINO. Several things. First of all, the skilled manpower problem cannot be solved solely by the Department of Defense. We recognize the contribution we make to the Federal expenditures and the impact on industry employment. We have a very deep interest and a very deep responsibility in this area. We're dealing with the Department of Labor right now on ways that we can rejuvenate our technical and skilled manpower base from skilled machinists all the way up to degreed engineers.

Representative HAMILTON. What kinds of things are you talking about? Mr. Thurow wanted a big Government program here. Are you going to support that idea?

Mr. MITTINO. At this time, our effort is limited to providing our own type of help to industry in training people. One good example is that we loan machine tools to industry on a loan free basis to nonprofit institutions. These machine tools are used to train skilled machinists.

Representative HAMILTON. Do you see this bidding up process happending for skilled manpower, engineers or tool and die makers, or whatever? Is that beginning to happen now?

Mr. MITTINO. I'll have to claim some ignorance on that, Mr. Chairman. I don't personally get into that area.

Representative HAMILTON. I see. Do any of you here deal with that particularly?

Mr. BORSTING. Certainly we have seen times in certain industries where skills have been bid up. For example, in the engineering area that Professor Thurow mentioned, industry has been bidding up the salaries of engineers.

Now I do think that we as the Government, should try to do something to stimulate people going into certain tight manpower areas. The marketplace, I think, is sometimes a very poor, shortrun provider for this sort of thing. In the long run, it will stabilize. People will realize, particularly youngsters, that the engineering profession is a very good profession to go into and they will go to school. But it takes time.

So some possible temporary measures—I wouldn't advocate a large Federal program—to stimulate the development of engineers and to develop blue-collar workers in certain areas might be appropriate.

The Defense Science Board made a recommendation just not too long ago in their summer study that Defense work with the Congress to provide fellowships for each State in engineering at universities. That would be partially subsidized and any individual would have a commitment to work with Defense for a certain length of time. That's not been proposed formally by Defense, but this could be an example of the type of program needed.

WEAPONS SYSTEMS COST GROWTH PROBLEM

Representative HAMILTON. What about this cost growth problem in weapons systems? What are you doing about that?

Mr. BORSTING. Well, let me just indicate two things. Mr. Carlucci, the Deputy Secretary of Defense, discussed this problem and some of the procurement initiatives with two committees yesterday afternoon and Tuesday morning, and I'm sure the record will give much more complete discussion than I could give. But let me comment on your questions.

When we looked at this in great detail early this spring, we identified quite a few problems and I think that some of the problems have been talked about here, but let me just mention a few. We try to do too much at one time by looking for quantum jumps in capability, which is excessively costly. That was mentioned earlier. We're trying in the future to be much more evolutionary rather than revolutionary. I'm not sure that I should use the word "revolutionary," but I think you understand the context.

The next item, early cost schedule and performance estimates are overly optimistic. We've initiated reforms to try to change that. Readiness considerations are primary. That's definitely the Secretary's top priority, readiness. If he would list his priorities, Cap Weinberger would say that readiness would be first, sustainability second, modernization third, and force structure fourth.

Now I should caveat that by saying that you can't sacrifice sustainability, modernization, and force structure. You obviously have to have sustainability and modernization in the force structure. So there's a mix here. In fact, these priorities were reflected in the changes that we made to the defense budget this fall with the President's program in reducing defense outlays. These priorities were used.

Next, too many systems compete for scarce resources. We fail to fund the higher priority systems fully. We're taking steps to cancel marginal systems.

Next, too much paperwork and too many regulations are in our resource management process. In our own program process this year, we cut the program paperwork by 50 percent. We have asked the Congress to work with us to cut the material that we give to the Congress.

We are also asking for other items like multiyear procurement, which we think will help us cut costs.

Another item was too many reviews of technical issues by the Office of the Secretary of Defense and the Congress; in other words, micromanagement by everybody. We're doing our best to control this in the building. I'm not sure that we have much control of micromanagement outside the Pentagon.

Next, starts, stops, stretchouts, redirection, and inordinately long decision times cause instability. As was mentioned earlier, the defense budget has been very unstable in the last decade or so and that has caused the eroding of the industrial base. It has caused us, as Mr. Capra mentioned, to have inefficient production rates.

We are very much committed, and we hope that the Congress will help in making that process much more stable in the future.

The last point is that we felt the process discouraged capital formation and investment. I've already mentioned that the administration is encouraging investment through tax reforms.

Representative Hamilton. I would like to have you comment, if you would—you do not need to do it now, but perhaps you can do it for the record—on Mr. Gansler's testimony.[1] Can you furnish the committee with that? What is the Defense Department's judgment as to each of the points he mentions in his testimony, and what are you doing about it?

I remember he said at one point in his testimony that you are acting on some of those questions.

Mr. Borsting. He was complimentary. He said that, I believe, of his 10 initiatives, 1, 3, 5 and 8, we were doing things about.

Representative Hamilton. Yes.

Mr. Borsting. He encouraged us to do more.

Representative Hamilton. Can we have that spelled out?

Mr. Borsting. I'll be happy to supply that for the record.

[The following information was subsequently supplied for the record:]

Defense Department's Additional Comments Regarding Former Deputy Assistant Secretary of Defense for Material Acquisitions Jacques S. Gansler's Testimony at the October 13, 1981, Subcommittee Hearing

1. *Introduce stability into defense planning and budgeting process.*—One of the principal objectives of our acquisition improvement actions is to provide a measure of stability in the acquisition process. A key element is congressional approval of a DoD multiyear procurement policy on selected mature systems. The savings which could result from improved planning, investment, and economical procurement of components and assemblies far outweigh the risks of possible cancellation. As we nominate systems for multiyear treatment, we will be prepared to justify the savings and will seek your support of the needed congressional commitment through the authorization and appropriation process. In the same vein, we have proposed that DoD be given authority to transfer funds from procurement to RDT&E for a given system when this will result in a more effective way to design and build new equipment.

2. *Utilize realistic initial program budgets.*—"Buying-In" has contributed to unanticipated cost growth. Costs sometimes have been understated to force-fit programs to budgets, and motivate contractors to temporarily absorb or underwrite costs. The need to correct the buying-in problem has been recognized for some time. Since 1972 independent cost estimates have been prepared by the

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[1] See Mr. Gansler's testimony beginning on p. 81.

Services and reviewed by the OSD Cost Analysis Improvement Group for all major systems acquisitions. Although there is reason to believe this procedure has resulted in some improvements, it clearly has not been a full solution. Deputy Secretary Carlucci initiated several actions in April of this year that specifically address the need to further improve the budgeting of weapons systems costs. Chief among these initiatives is a requirement that the Services budget the most likely cost, taking full cognizance of predictable cost increases due to production and technological risks. This initiative is strongly supported by initiatives to increase program stability while procuring in economic production quantities. Taken together, these actions significantly improve our ability to initially make better estimates and then, having made them, to maintain a production environment that provides for their realization. Perhaps the most telling initiative is the continuing attention by the Deputy Secretary to the problem. We all recognize the solution is not a one time fix, but we do expect the on-going scrutiny and concern at the Department's top managers, together with the acquisition system revisions to result in more realistic estimates, better budgets, and better cost control.

3. Steps should be taken to introduce real competition into defense procurements.—The benefits of competition change as a weapon system moves through the acquisition cycle. During concept formulation, the benefits sought from competition (awarding contracts to more than one contractor) are a complex mix of objectives to improve the design concept, reduce performance and schedule risks, and minimize costs. In this phase the dollar investments needed to establish and maintain competition are relatively small, although additional management burdens are placed on the Project Office.

As the design moves in to full-scale development, competition continues to be desirable during the source selection phase so a range of technical options, each with its own unique technical risk, will be available. But the choice is quickly narrowed, usually to a single design because the cost of maintaining multiple sources rapidly escalates and the benefits dwindle. This, at times, causes the contractors to be motivated to bid low (irrespective of the type of development contract being negotiated) in the hope of earning profits in the subsequent production contracts.

Competition in the production phase is viewed as a means of reducing unit costs. In order to achieve these reductions, a sizable investment is required to qualify a second source (transfer of technology, production and test of initial qualifications, etc.) in the initial year with anticipated savings not to be realized until several years in the future.

In a July 27, 1981 Memorandum, the Deputy Secretary of Defense directed the Military Departments that managers at all levels review their efforts to obtain maximum competition for their contractual requirements. The value of competition in the acquisition process is widely recognized and DoD is fully committed to strengthening the necessary management procedures for the enhancements of competition.

4. The DoD must begin to address directly the problems at the lower tiers of the defense industry.—One of the concerns for improving acquisition management involves the subcontract base. We are working hard to stimulate interest in the DoD at that level and to insure that our prime contractors pass down the acquisition improvements to their subcontractors. The revised DoD policy with respect to progress payments will help subcontractors and small business concerns to remain competitive in defense industries. In August 1981, the percentages of progress payments were raised to 95 percent for small business concerns and to 90 percent for other than small business concerns. This liberal policy toward progress payments means industry does not have to tie up large amounts of its own capital in performing defense contracts. Most of all a stable defense plan for the out-years should reduce risks for lower-tier defense suppliers and attract more people to the defense market place.

5. The government must create incentives for contractors to make capital investments.—The defense budget has been very unstable in the last decade and that has caused the eroding of the industrial base by discouraging capital formation and investment. A measure of stability in the acquisition process could help reverse this damaging trend. Tax reform, particularly the title which has to do with granting tax write-offs for plant and equipment will encourage industry to make the capital investments needed to achieve lower equipment costs and at the same time increase capacity—both conditions favorable to the Department of Defense.

6. The government must develop and implement specific labor policies.—The skilled manpower problem cannot be solved solely by the Department of Defense. We are exploring with the Department of Labor certain steps which might revitalize our technical and skilled manpower base including both blue collar workers and engineers with advanced degrees. One suggestion involves providing machine tools at a no cost basis to educational centers and trade schools which would teach these skills. The Defense Science Board made a recommendation last summer that Defense work with the Congress to provide fellowships from each state in engineering at colleges and universities. In return for subsidized education in engineering, students would have a commitment to work with defense for a certain length of time. The recommendation has not been proposed formally by Defense.

7. Integrate civilian and defense plants.—Our support of this concept to date has been to foster private (civilian) acquisition of defense plants under an "excess to ownership but not excess to requirements" concept. We believe that private ownership of many of our plants and manufacturing equipment would be in the best interest of the taxpayer. Private ownership would permit better plant loading and would aid in providing more stability for the workforce. There is already a certain amount of public/private versatility within certain defense-owned plants, such as in heavy forging facilities and we would like to see more. Officials in DoD are in close contact with Mr. Gansler and are familiar with his work. These officials will explore with Mr. Gansler any opportunity he sees for implementation of this concept.

8. DoD must improve R&D planning.—The Defense Acquisition Process has been under intense scrutiny since early March of this year. A considerable effort, employing the full time of our acquisition experts was mounted. What we have done is to implement good business management throughout the DoD acquisition community. We have adopted an evolutionary approach to weapons development, rather than adopting the latest technologies in every new weapons system.

9. The government must establish clear and rational international policies in the defense procurement area.—As you know, the Department of Defense has been pursuing a rationalization/standardization policy with our NATO allies since the mid 1970's. Standardization is the process by which member nations achieve the closest practicable cooperation among forces; the most efficient use of research, development and production resources; and agree to adopt on the broadest possible basis the use of (a) common or compatible operational, administrative, and logistics procedures; (b) common or compatible technical procedures and criteria; (c) common, compatible, or interchangeable supplies, components, weapons, or equipment; and (d) common or compatible tactical doctrine with corresponding organizational compatibility.

The Department of Defense also has a number of coproductive agreements with other countries, including a European consortium to build the F-16, and with Canada for a number of off-the-shelf items dating back to the 1960's. Discussions are also underway with Japan on these subjects.

10. The government should institutionalize an approach to improving the defense industrys' economic efficiency and strategic responsiveness.—The Department of Defense recognizes that countervailing influences frequently result in unnecessary sole source situations and contract awards. A bad situation is made worse when the sole source supplier is located outside the United States.

As Mr. Gansler points out, the institutionalizing of a set of sectoral development plans for the defense industry is most controversial. These decisions traditionally have been made in the marketplace and not in government. We believe that there are steps which the government can take which will facilitate decisions in the marketplace without direct intervention. The existence of long-term development plans for sectors of the defense industry would provide desired stability required to encourage capital investment, efficient use of labor and development of multiple suppliers. Proper tax incentives through tax reform and the recent increase in the allocation of progress payments are measures which should encourage competition. A serious effort is underway to reduce the number of restrictive DoD Directives, burdensome reports, and other red tape, which particularly discourage the small businesses from entering the defense marketplace. Our officials will continue their dialogue with Mr. Gansler concerning this recommendation.

GNP PRICE DEFLATOR USE

Representative HAMILTON. Now, why is it that you use the GNP price deflator in projecting defense costs when the defense deflator is always substantially higher and, in recent years, has been very much higher?

It is 3 percent or more. Isn't it a bit unrealistic to come in here with projections that use the GNP deflator instead of the defense deflator?

Mr. BORSTING. In past years, there has been no doubt that the statistics are such that if you look at the defense market basket and took a defense deflator, after the fact it would be higher than the GNP deflator.

As I'm sure you're aware, we, as all Government agencies, use the GNP deflator estimated by OMB for our purchases.

Representative HAMILTON. Yes, but my question is why? One of the things that you just told me with regard to costgrowth is that you thought the early estimates were too optimistic. Well, surely, one of the reasons that your early estimates are too optimistic is because you are using the wrong inflation guide.

Mr. BORSTING. There are several arguments. Let me just enumerate a few of them. I think that the Office of Management and Budget would argue, quite fairly, they would like the same deflator for everyone.

Representative HAMILTON. Well, why, if it is not realistic?

Mr. BORSTING. I'm saying that they would argue for the same deflator.

Representative HAMILTON. Well, I hope you will shoot them down on that one, Mr. Borsting.

Mr. BORSTING. Let me comment on the initiatives later.

Representative HAMILTON. Very well.

Mr. BORSTING. Also there's a very good argument that you should not use too high deflators, that it would be self-serving, that you would build in even more of an inflation into the costs and into the actual things that happen with regard to weapons systems.

Now certainly, Defense is hurt more if inflation is misestimated in the outyears than most agencies. The reason for this is the full funding policy of the Department.

In other words, when our budget authority will fund a ship, as you know, that spends out over 5 or more years and our assumptions for outyear inflation rates are low. If the rate of inflation is not brought down to these levels, we're going to have built-in cost growth. There's no way around it.

Now we are working and have been working—in fact, one of the Carlucci 31 initiatives to work with OMB on the general inflation question. We are working with OMB on this question—whether you should have a defense deflator, whether you should continue to use the GNP deflator. These are some of the options.

ABSENCE OF DOD 5-YEAR PLAN

Representative HAMILTON. Now we have had several witnesses complain to us about the absence of the new 5-year plan because they say that it would be helpful to have more detail on the composition of the plan. That plan is much overdue, as I understand it. What is the problem there? What is the delay?

Mr. BORSTING. No; I don't think it's overdue. As I said in my statement, the President will have a 5-year plan where he submits the 1983 budget. The plan is being reviewed by OMB and will be available when the President submits his budget.

This is a normal procedure.

Representative HAMILTON. Shouldn't there have been one some time ago, when the President submitted his budget this year?

Mr. BORSTING. Well, let's go back. Certainly in January of 1980, when President Carter submitted the budget, there was a 5-year plan. Now when President Reagan submitted the amended budget in March, there was certainly not time to do a comprehensive 5-year plan in that timeframe.

Representative HAMILTON. You are going to skip this year and have one ready for us in January; is that it?

Mr. BORSTING. Yes.

Representative HAMILTON. Do you have the data problem that other witnesses have talked to us about? They indicate that information about capacity utilization and labor is too aggregated, that there is insufficient information about firms that do business in the defense market. Do you sense that as a very difficult problem for you?

Mr. BORSTING. Yes; I think that is a difficult problem and we are, as I mentioned in my statement, working with various private economic firms to try to get a better data base.

Representative HAMILTON. How are you coming on that?

Mr. BORSTING. I think fairly well. It's a long-term process.

Representative HAMILTON. Is that collected through the Department of Commerce, that information, or is it collected through you?

Mr. BORSTING. Some would be through us; some, I'm sure, would be through the Department of Commerce; some would come from the private economic firms; correct, Mr. Beach?

Mr. BEACH. Yes; we're trying to use as many data sources as we can. Most of the information you see, for example, on charts about inflation, the historical data comes from the Department of Commerce. Some of the other data that we're trying to collect on capacity and capacity utilization also comes from the Department of Commerce in terms of historical results. Now our effort is to try to get with these firms on an individual basis and see if they will provide us data about their future expectations.

That normally is not data that we can collect through other Government agencies.

Representative HAMILTON. Do you have information on whether contractors in fact respond to increased military procurement with increased investment in plant and equipment? Do you have data on that?

Mr. BORSTING. I'll let Mr. Mittino answer that in detail. Let me comment, though, in general with a point that I would very much like to emphasize. The defense budget has been so erratic and we have not had stability. There are a large number of contractors who just did not want to do business with the defense industry. That has created a problem in building up their capital to do work.

I think the most important thing that we can do in the next year or so is to try to work with the Congress to get a stable defense program. But I will let Mr. Mittino comment in detail.

Representative HAMILTON. Very well.

Mr. MITTINO. The question, I believe, had to do with how do we or do we have data sufficient to make a good judgment with regard to defense producers, investments?

Representative HAMILTON. Yes.

Mr. MITTINO. Generally, we do not have separate data bases for this, Congressman, and the reason is that we, and this is not commonly understood, is that the Defense Department, for most commodities, is less than a 10-percent customer for the U.S. output of those commodities. That's about as startling a fact as in a great many areas.

Representative HAMILTON. Yes.

Mr. MITTINO. Because of that, we essentially are another claimant on many of the same commodities as private industry. We're another customer. When it comes to pull this data in, then, we do work, as the Secretary said, with the private firms, with the associations and, of course, through the Department of Commerce. And they have done quite well in coming up with the reasons for noninvestment, if I can use that term, over the recent past.

We hope to see this improve now, especially with the new tax bill, particularly the title portion of it which has to do with granting tax writeoffs for plant and equipment.

Representative HAMILTON. So in the past, at least, when you have had an increase in the defense procurement budget, you have not seen an increase in new investment in these special defense industries or among the contractors generally. Do I understand that correctly?

Mr. MITTINO. Not necessarily. That's sort of an imprecise answer, but that's sort of how it works. And the reasons are way down the list. They have to do with, part of it, return on investment.

Representative HAMILTON. Does not the exercise of budget authority create a demand for resources that may, in itself, be inflationary?

Mr. BORSTING. Could you elaborate a little bit on that question, Mr. Chairman?

Representative HAMILTON. In other words, is it not mistaken to regard only outlays as a barometer of possible inflationary pressures? When you have a sharp increase in budget authority as distinct from outlays, don't you then see defense firms beginning to gear up for the new work and hiring new people when the budget authority figure goes up?

Mr. BORSTING. Certainly, when the budget authority figure goes up, they should plan. Now there is time to plan because of the earlier comment I made concerning the lag between budget authority and outlays.

Representative HAMILTON. Very well, gentlemen, thank you very much. We appreciate your testimony.

Mr. BORSTING. Thank you.

Representative HAMILTON. The subcommittee stands adjourned.

[Whereupon, at 12:15 p.m., the subcommittee adjourned, subject to the call of the Chair.]

THE DEFENSE PROGRAM AND THE ECONOMY

WEDNESDAY, DECEMBER 15, 1982

Congress of the United States,
Subcommittee on Economic Goals and
Intergovernmental Policy of the
Joint Economic Committee,
Washington, D.C.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2247, Rayburn House Office Building, Hon. Lee H. Hamilton (chairman of the subcommittee) presiding.

Present: Representative Hamilton.

Also present: James K. Galbraith, executive director; Richard F. Kaufman, assistant director-general counsel; and Chris Frenze, professional staff member.

OPENING STATEMENT OF REPRESENTATIVE HAMILTON, CHAIRMAN

Representative Hamilton. The Subcommittee on Economic Goals and Intergovernmental Policy of the Joint Economic Committee will come to order.

This morning we begin a fresh look at the economic effects of the defense buildup. A year ago this subcommittee held hearings on the same subject. At the time the economy was entering a recession, yet there were disquieting reports from a number of sources, including the Congressional Budget Office, that the rapid pace of the planned defense buildup could contribute to inflationary problems and industrial bottlenecks as the economy recovered from the recession and reached a level of high employment.

In the year that has passed, the recession has turned out to be deeper and longer than was forecast at the end of 1981. This has created much greater excess capacity and unemployment than was anticipated.

Obviously, the defense buildup has probably not created inflationary problems in the overall economy so far and is not likely to do so until the recovery is underway.

Nevertheless, there are several reasons to be concerned about the buildup on economic grounds. These reasons have to do with the Federal deficit which has become massive and is due to become even more so: The efficient management of the buildup by the Defense Department, and the question of whether the planned expenditures will be adequate to finance it; the ability of the defense industries in the medium term to respond without delays to the increased military demands; the medium term possible effects of the buildup on inflation and industrial bottlenecks.

Our witnesses are eminently qualified to explore these issues. Otto Eckstein is a professor of economics at Harvard University and president of Data Resources, Inc. Murray Weidenbaum is the former Chairman of the Council of Economic Advisers and currently professor of economics at Washington University in St. Louis.

I just noticed that the bells have rung for an initial vote in the House, so I think what I will do at this point is recess before we start your testimony and then we'll come back and begin with your oral statements. So the subcommittee will stand in recess.

[A short recess was taken.]

Representative HAMILTON. The subcommittee will resume its sitting. I apologize for the delay and since we are a little late, I wonder if I could ask you to summarize your prepared statements. I will give you whatever time you would like, but perhaps we could move more quickly to questions if you submit your prepared statements to be made a part of the record and summarize the points you think are most important.

Mr. Weidenbaum, would you begin, please.

STATEMENT OF MURRAY L. WEIDENBAUM, PROFESSOR OF ECONOMICS, CENTER FOR THE STUDY OF AMERICAN BUSINESS, WASHINGTON UNIVERSITY, ST. LOUIS, MO.

Mr. WEIDENBAUM. Thank you, Mr. Chairman, I have a boiled down version I will read.

The rapid rise in military spending requires careful examination both as a budget matter and as an economic policy issue. Any serious examination of the impact of defense spending must take place within the context of the total Federal budget and the national economy. Here I offer some key points.

One, although the odds are tilting to recovery, an actual upturn remains a forecast. The economy is weaker than generally expected. Although the underlying forces for expansion have been strengthened in the long run, they are still sputtering in the short run.

Two, the budget is badly out of balance. Very large deficits will continue even after recovery gets going. The very prospect for such massive deficit financing constitutes a serious obstacle to strong economic growth. These deficits also keep real interest rates high and are a factor in our rising trade deficit.

Three, there is no need for a reversal of economic policy. Certainly there is little support for increasing taxes or accelerating spending or expanding the burden of regulation or losing the gains on inflation.

Four, what is needed is a carefully crafted twist in the conduct of economic policy consisting of two components:

First, based on the current weakness of the economy, Government and financial market decisionmakers need to acknowledge and accept, for the time being, less restraining monetary and fiscal policy than characterized 1981 and early 1982. The Fed has already moved in that direction. I expect that fiscal policy will show a 50-percent larger deficit this year than last year, mainly because of the reluctance of the political process to make tough budget choices.

But the heart of the policy twist is the second point. Accepting a budget deficit this year is not very difficult. The heart of the twist is making tough decisions that will help assure continuation of the anti-inflationary policy after the recovery gets going. Here financial markets have been burnt frequently by political decisions to shift to ease now and merely promising to return to restraint later. For the twist in policy to be credible, actions must be taken now to insure restraint during the ensuing expansion. Now I suggest this restraint on the spending side of the budget.

Five, the composition of the Federal budget requires serious actions be taken today if you are going to affect the flow of spending many years in the future. The leadtime can be used to special advantage at present because actions to cut the budget now will not have significant effects during the current recession but only by the middle and late 1980's.

Such tough action on the fiscal front will also make it more likely that the Fed can promptly return to its posture of monetary growth.

In the next part of my prepared statement, which I will skip over, I show how entitlements are one of those long leadtime items.

But let me turn to defense which is the key interest of this subcommittee. Defense is dominated by long leadtime decisionmaking. I suggest that the retired pay be considered together with the civilian entitlements. But in the personnel area I see little reason to maintain a policy that deviates so substantially from long-established economic principles of wage and salary determination.

I have in mind specifically paying more for skills in short supply than those in surplus in the military establishment. I still vividly recall the horrified response of a very distinguished military leader when I made that suggestion. He pointed out that business practices are not appropriate for the nonprofit sector. My response, I think, still was compelling. As a university professor, I understand the nature of the nonprofit environment. But if the typical university were to follow the approach of the military and pay uniformly for rank and seniority we would have a great surplus of latin teachers and a severe shortage of physics teachers.

A greater recognition of market forces could help restrain the rapid growth of the military budget. In a moment I will talk about the key area of military procurement which surely involves the long leadtime opportunity. Let me just give you a couple of examples.

Two percent of a typical appropriation for shipbuilding is spent in the year in which the appropriation is made, going up to 10 percent for aircraft. Surely, today's decisions affect tomorrow's spending.

But let me also just mention in passing—I go into it in my prepared statement—that entitlements and defense do not exhaust the possibilities for budget restraint. There is an "all other" category, and there are many sacred cows there.

Let me turn to the section of my prepared statement analyzing the military buildup. I suggest there is a broad-based agreement on the need to expand national defense spending, but within that context there is considerable disagreement over the specifics. Clearly, the question I want to emphasize is, How rapid a military buildup is both desirable and feasible? Of course, the current recession has resulted in substantial excess capacity in industry. For the next several years there will be adequate industrial capacity to meet civilian and military needs. But I suggest when we look beyond, to the middle of the decade and the years that follow, when significant economic growth coincides with the peak of the military buildup, then the questions of feasibility, of potential bottlenecks, surely arise.

In my prepared statement I quote at length the work of DRI. But as the distinguished president of that organization is here, I won't duplicate. I also note in my prepared statement that a Commerce Department study examined this question of the feasibility of the buildup and it did conclude that, for most of the 58 major defense supplying industries, existing capacity plus planned increases are sufficient to supply projected military and civilian demands through 1985. However, they said, should further capacity expansion not take place, meeting those requirements would mean using outmoded and economically inefficient capacity which would increase costs and prices.

A few potential bottleneck areas do seem to exist. I note them in my prepared statement. I also point out that Commerce reports very matter of factly that in key defense areas there are likely to be increased foreign dependence. For example, in an industry that they cite as qualitatively important to defense—electrometallurgical products—the dependence on imports is likely to rise from 27 percent to 45 percent in 1985, and other industries similarly.

I point out that the hoary national security argument is trotted out to justify a host of subsidies to sectors of the economy far less closely related to defense output. Here the import sensitivity is clear.

There is an implicit conclusion that arises from these concerns. Adjustment of scheduled defense outlays to conform more closely with expected defense production capabilities would result in slowing down the rate of increase in defense spending later in the decade and thus lower the projected deficits of the Federal Government.

Reducing the likelihood of cost overruns could have important program effects on the defense effort. As shown in table 4 of my prepared statement in the recent past, weapons projects with large cost overruns were most likely to be cut back. Those that kept closer to outlay targets were more likely to be continued as planned.

Even in the military economy there is a relationship between costs and quantity; that is, basic economic forces continue to work.

To conclude, in responding to the concerns over the large Federal deficits projected for the next several years, I suggest emphasizing another hard look on the spending side of the budget. Official projections of future military outlays in real terms have risen successively during the last 2 years from 5-percent to 9-percent per annum. Little justification is offered for the need and feasibility of this sharply upward movement. Indeed, one may speculate as to what has changed in the international environment during 1981 and 1982 to justify the acceleration in defense.

On the basis of past experience it is advisable that a tough-minded attitude be taken to military budget requests. That would only be comparable to treatment of many civilian spending activities. Reducing the extent of cost overruns and bottlenecks will help to maintain the necessary support for the strengthened national defense that is required.

Because of the potential capacity problems, a given cutback in nominal military spending would actually result in less than a proportional reduction in real procurement outlays. This would come about because of reduced price pressures.

My final point is a plea for balance in both economic and defense policymaking. Thank you very much.

[The prepared statement of Mr. Weidenbaum follows:]

PREPARED STATEMENT OF MURRAY L. WEIDENBAUM

DEFENSE SPENDING AND ECONOMIC POLICY: THE NEED FOR A TWIST IN POLICY

The rapid rise scheduled for military spending in the next several years requires careful examination both as a budgetary matter and as an issue of economic policy. In this statement, I show how a "policy twist" could make a constructive contribution both to the efficiency of military production and to the recovery of the national economy.

The Current Economic Policy Context

Any serious examination of the impacts of defense spending must take place within the context of what is happening in the total federal budget and in the national economy. Several key points emerge from such analysis:

1. Although the odds are tilting to economic recovery, an actual upturn in production remains a forecast. Clearly, the economy is weaker than was generally expected. Although the underlying forces for expansion have been strengthened in the long-run, they are still sputtering in the short run.
2. The federal budget is badly out of balance. Very large deficits are likely to continue even after recovery is underway. The

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Note: Weidenbaum holds the Mallinckrodt Distinguished University Professorship at Washington University in St. Louis. He is the author of Economics of Peacetime Defense and Economic Impact of the Vietnam War.

very prospect for such continuing massive deficit financing constitutes a serious obstacle to a strong pattern of economic growth. Those deficits keep real interest rates high and, working through the exchange rate mechanism, are a factor in the rising U.S. trade deficit.

3. Yet there is no need for a reversal of economic policy. Indeed such a fundamental change would be undesirable. In any event, there is little support for increasing taxes, accelerating the government's spending rate, expanding the burden of regulation, or losing the gains on the inflation front by returning to an easy money policy.

4. What is needed is a carefully crafted twist in the conduct of economic policy. Such a policy twist should consist essentially of two components:

   a. Based on the current weaknesses of the economy, the public -- including government decisionmakers and financial market participants -- needs to acknowledge and accept for the present time less restraining monetary and fiscal policy than characterized 1981 and early 1982. The Federal Reserve System has taken the leadership in moving monetary policy in that direction, for reasons described essentially as short term and transitory. As to fiscal policy, we also need to acknowledge and accept a large budget deficit for the current fiscal year, about 50 percent larger than the total of red ink for fiscal 1982. The reluctance of the political process to make tough budget choices, in conjunction with the continued recession, virtually ensures that result.

b. But the heart of the policy twist is simultaneously making the tough decisions that will help to assure the continuation of anti-inflationary policies after the recovery gets going. Financial markets have been burnt so frequently in the past by political decisions to eat the candy now (shift to ease) accompanied by mere promises to take the medicine later (the return to restraint). For the policy twist to be credible, actions must be taken now that will ensure appropriate economic restraint during the ensuing economic expansion. For the adaptation to be a modification and not an abandonment of current policy, the twist must occur on the spending side of the budget. Such action would help to assure restraint on the growth of government and thus carry out a fundamental objective of the Reagan Administration.

5. It turns out that the composition of the federal budget lends itself -- in fact it requires -- that serious actions be taken today to affect the flow of spending many years in the future. The great bulk of the outlays in any one year is determined by actions taken -- or not taken -- several years previously. Such "lead time" can be used to special advantage in the present circumstances. Actions to cut the budget now will not have

their primary effects during the current recession, but in the middle and late 1980s. Such tough action on the fiscal front will also make it more likely that the Fed can promptly return to its posture of moderate monetary growth. Moreover, since interest rates are the link between the present and the future, taking tough budgetary actions now should have a salutory influence on financial markets. Thus, the effect on current interest rates, especially longer term, should be downward.

Dealing With Deficits and Rapidly Rising Spending

Entitlements

This notion of acting now to influence the future can be readily applied to each major segment of the budget. "Entitlements," or payments to individuals, the largest budget category, have also been the most rapidly growing component in recent years. Relatively little can be done in this area that will have a substantial effect immediately, aside from some modest adjustments in the formulas used for computing annual cost-of-living increases. As demonstrated so vividly in 1981, those already on the retirement rolls, as well as prospective retirees, truly believe that they have paid for and are entitled to their benefits. They will vehemently oppose any effort to slow the spending growth to bring about a closer balance with revenues.

The stark reality is that feasible changes in entitlements, such as social security, likely will affect mainly those who are still years away from retirement. But the sooner action is taken, the less likely is the rejoinder that the benefit change is being sprung on unsuspecting beneficiaries. In any event, it surely is not too soon to start to educate the public as to the realities of the major entitlements: the beneficiaries are receiving far more than they would be "entitled" to under any insurance concept that links payments to contributions (including employer contributions and interest on both).

Defense Spending

Likewise, the second largest category of the federal budget, defense spending, is dominated by long lead-time decision making. In the important personnel area, the retired pay question should be considered together with the civilian entitlement programs. Surely, the ground rules should not be suddenly or retroactively shifted. But, looking ahead, there is little reason to maintain, for the indefinite future, a policy that encourages men and women to retire in their early 40s, and receive generous pensions while actively working in civilian employment -- and yet also qualify for one or more additional pensions.

In the larger category of pay of active duty forces, it is high time that the long-established economic principles of wage and salary determination, which operate quite well in the private sector, be extended to the military establishment. Specifically, I have in mind the sensible practice of paying more for skills in short supply than those in surplus.

However, I still vividly recall the horrified response of a distinguished military leader when I broached this suggestion. Very patiently, he explained to me that business practices are not always appropriate for the non-profit sector, especially for a career cadre of men and women whose morale is crucial. I still believe that my response was compelling: as a university professor, I understand the nature of the non-profit environment. But if the typical university were to follow the approach of the military establishment and pay faculty uniformly for rank and seniority, we would probably have a great surplus of Latin instructors and a severe shortage of physics professors. A greater recognition of market forces could help restrain the rapid growth of the military budget that is presently envisioned.

The issue of military hard goods procurement is central to the long lead-time problem and simultaneously provides great opportunity for the policymaker: programs approved this year will involve outlays over the next five years. Often very little of this spending will occur in the year in which the appropriation is made. For example, only 2 percent of a typical appropriation for shipbuilding will be spent in the year in which the appropriation is made, 6 percent on average in the case of tanks, 8 percent for military construction, and 10 percent for aircraft. Because of this committee's special interest, I offer a detailed analysis of military procurement impacts in a subsequent section of this statement.

Other Budget Areas

I would like to turn quickly to the rest of the federal budget. Here I report an important discovery. In addition to entitlements and defense spending, I have identified a third category of the budget, which I call "all other." Contrary to widespread belief, not all of the items in this part of the budget are social programs, nor have they all been cut to the bone. Generous subsidy programs -- to farmers, shipbuilders, and waterway users -- quickly come to mind. Virtually every department and agency of the federal government provides special benefits to select segments of society at the expense of the taxpayer. Again, commitments in many cases are made years in advance, and today's actions will slow down spending years in the future.

Let me add a short plug for another policy area with significant lead time: the thicket of environmental and related regulations which, in practice, constitute an important barrier to the construction of new production capacity. Clearly, most companies are now operating well below existing capacity. This is precisely the sensible time to carefully review and revise the many regulatory obstacles to new undertakings -- obstacles that will become a real concern during the next economic upturn, when it will be too late to consider sensible reforms that would be effective and helpful during that cycle. It is also pertinent to note that several of the industries that I cite later in this testimony as potential defense production bottlenecks are saddled with unusually heavy regulatory costs. A new study by Professor B. Peter Pashigian of the University of Chicago reports, for example, that the primary copper industry's pollution abatement costs are 8.7 percent of its value added, 7.1 percent for zinc and 5.8 percent for electrometallurgical products -- all key defense-supplying industries. In striking contrast, the ratio is less than 0.1 percent for luggage, signs, advertising displays, and jewelry.

To those who are skeptical of the policy twist proposed in this statement, I respond that the alternatives are far less attractive. These include tax increases that reverse the accomplishments of the 1981 tax act, or continued large deficits that will inhibit economic recovery or lead to the return of escalating inflation.

Analyzing the Military Buildup

We should acknowledge at the outset the broad-based agreement on the need to expand U.S. national defense spending. President Carter's last budget and all of President Reagan's budget statements have projected significant growth in defense spending in real terms for each of the five fiscal years 1982-1986. The Council of Economic Advisers stated in its annual report accompanying the President's 1982 Economic Report, "any economic effects...must be assessed in the context of the overriding need for maintaining the level of defense spending necessary for national security."

Within that context, there has been considerable discussion and disagreement over the specifics of the buildup. But it should be recognized that none of this is a debate between hawks and doves. Among the specific questions raised is the economic feasibility of the currently contemplated schedule of military outlays. How rapid a military buildup is both desirable and feasible?

Clearly, the 1981-82 recession has resulted in such substantial amounts of excess capacity in American industry that, at least for the next few years, there is likely in general to be adequate industrial capacity to meet military and civilian needs. But it is useful to look beyond, to the middle of the decade, when significant economic growth may coincide with the peak of the military buildup. In such circumstances, capacity questions could well arise. The CEA annual report deals with that eventuality, pointing out three results of the defense buildup that can be anticipated:

1. The substantial transfer of resources in the durable goods sector to defense production may increase relative prices in at least some of the affected industries. Both the Department of Defense and private purchasers may have to pay more for goods from these industries. I suggest that this premium is likely to increase with the size of the defense budget.

2. Increased demand may produce delays in the delivery of military goods. Delivery timetables that seem realistic today may, in some cases, become obsolete as producers try to accommodate both the defense buildup and the expansion in civilian investment.
3. Some crowding out of private investment may occur. Defense procurement uses many of the same physical resources needed for private investment in civilian producer durables and are often supplied by the same companies. The Defense Production Act gives defense priority in the market place. Thus, some private firms may turn to foreign sources for materials while others may cancel or postpone plans for expansion.

When we examine the details of the military budget, we find that the concentration of the planned military increases within the procurement and research and development categories implies weapon production growth rates more rapid than those which occurred at the peak of the Vietnam buildup. Moreover, the present expansion occurs after a decade of steady reductions in the defense industrial base.

A private economic consulting organization -- Data Resources, Inc. (DRI), of Cambridge, Massachusetts, points out in a May 1982 report:

> ...the combination of the increasing defense shares and the acceleration in growth rates raises concerns about industrial capabilities and spillover impacts on the economy.

DRI goes on to note that, with the implementation of significant investment programs in both plant and equipment and skilled labor forces, the problems of price pressures, bottlenecks and crowding out of civilian demand "could be constrained to isolated instances." Table 1 contains for some examples of extremely rapid growth rates in future defense industry

TABLE 1

PROJECTED INCREASES IN OUTPUT IN MAJOR DEFENSE SUPPLYING INDUSTRIES, 1982-1987

Average annual real percentage growth in projected output

Industry	Annual Increase In Total Output, 1982-87	Annual Increase In Defense Output, 1982-87
Radio & TV Communication Equipment	11.2%	15.7%
Aircraft	12.8	18.6
Aircraft engines and engine parts	13.0	16.3
Aircraft parts & equipment, n.e.c.	11.2	14.7
Complete guided missiles	11.5	15.2
Electronic components, n.e.c.	11.2	17.2
Tanks and tank components	22.6	27.1
Ammunition, excluding small arms, n.e.c	15.0	15.2
Motor vehicles parts and accessories	6.3	20.5
Motor vehicles	6.7	27.8
Other ordnance and accessories	13.5	14.4
Communications, excluding radio and TV	6.9	10.3
Semiconductors	13.7	20.2
Miscellaneous machinery	6.9	15.3
Electronic computing equipment	12.6	16.8
Aluminum rolling and drawing	7.9	17.9
Miscellaneous plastic products	8.5	17.3
Primary aluminum	7.3	17.1
Plastic materials and resins	8.8	17.8
Special dies, tools and accessories	8.2	15.8
Telephone and telegraph equipment	11.5	16.4
Metal stampings	7.0	18.6
Industrial trucks and tractors	9.9	14.1
Machine tools, metal cutting	9.2	15.7
Iron and steel foundries	4.3	13.2

Source: Compiled from Data Resources, Inc., Defense Economics Research Report, August 1982.

requirements. Over the six-year period 1982-87, double digit increases in annual output are shown for many industries, ranging from semiconductors to computers -- industries in which the United States is being pressed by its competitors to keep abreast of the state-of-the-art. The DRI conclusion is that the uncertainties about the capabilities of the defense industrial base and its linkages to other critical economic variables "will continue to cloud decisions regarding the defense budget."

A more recent Data Resources report (August 1982) is even less sanguine, pointing out that, since 1948, there has never before been a period of sustained growth in real defense spending such as that now planned. This more recent study concludes that the projected requirements for such large increases in defense output raise "obvious" questions about the ability of industry to meet them without adverse implications in terms of costs and leadtimes. A variation of that theme appears in an August 1982 study by the U.S. Department of Commerce which reminds us that defense expenditures do not affect all industries equally, but have "highly concentrated industrial impacts."

The Commerce Department examined a somewhat different time period than did DRI, but the conclusions are similar. For most of the 58 major defense-supplying industries which it studied, the Department of Commerce reported that existing capacity plus planned increases are sufficient to supply the projected military and civilian demands through 1985. However, the Department said that, should further capacity expansion not take place in some of these industries, meeting projected 1985 requirements would mean using outmoded, economically inefficient capacity, which would increase costs and prices. A few potential bottleneck areas do seem to exist. For example, requirements for lead smelting and refining are projected to rise by 12 percent from 1979 to 1985, but economically efficient capacity is estimated to decline by 4 percent. Likewise, requirements for brass, bronze, and copper foundries are shown to increase by 32 percent, but economically efficient capacity is expected to rise by 25 percent (see Table 2). How will all this balance out?

The Commerce study reported that some of our basic metal processing industries will likely need to increase their dependence on foreign sources of supply in order to meet the stepped-up military demands. For example, the electrometallurgical products industry (which was specifically noted because of its "qualitative importance to defense") met 27.6 percent of its needs with imports in 1979. That key industry is expected to increase that dependency to 45 percent in 1985. Likewise, zinc smelting and refining is anticipated to increase its import dependency from 33.4 percent in 1979 to 45 percent in 1985. Imports of miscellaneous refined nonferrous metals are estimated to comprise 66 percent of the industry in 1985, compared to 55.7 percent in 1979 (see Table 3). It is ironic to note the matter-of-fact way in which the Commerce Department reports such increased foreign dependence for some of the key defense-producing industries. On many other occasions, the hoary national security argument is trotted out to justify a host of subsidies to sectors of the economy far less closely related to defense output.

An implicit conclusion arises from these concerns: adjustments of scheduled defense outlays to conform more closely with expected domestic production capabilities would result in slowing down the rate of increase in defense spending later in the decade and, thus, lower the large projected deficits of the federal government.

TABLE 2

DEMAND AND SUPPLY BALANCE OF SELECTED DEFENSE-INTENSIVE INDUSTRIES, 1979-1988

Industy	Growth in Output Requirements 1979-1985	Potential Increase in Supply: Economically Efficient[a]	Potential Increase in Supply: Maximum Attainable[b]
Guided missiles and space vehicles	86%	86%	98%
Ammunition, except for small arms, n.e.c.	50	119	133
Tanks and tank components	83	83	107
Small arms	7	40	50
Small arms ammunition	82	72	89
Ordinance & accessories, n.e.c.	33	112	128
Iron and steel forgings	19	33	39
Lead smelting and refining	12	-4	11
Aluminum production and refining	15	16	16
Nonferrous rolling and drawing, n.e.c.	33	33	37
Brass, bronze and copper foundries	32	25	37
Electronic computing equipment	83	106	122
Semiconductors and related devices	76	106	116

[a] Based on concept of preferred capacity, defined as the level of operations plant managers prefer not to exceed because of considerations of cost and economic efficiency.

[b] Based on concept of practical capacity. Assumes no material, utility, or labor shortage and no consideration of increased pay or other input costs as limiting factors.

Source: Compiled from data of the U.S. Department of Commerce, Bureau of Industrial Economics.

TABLE 3

CHANGING IMPORT DEPENDENCE OF SELECTED DEFENSE INDUSTRIES

Industry	Imports as Percent of Total Supply	
	1979	1985 estimated
Iron and ferroalloy ores mining	25.0	28.1
Small arms	9.4	10.6
Blast furnaces and steel mills	10.1	13.0
Electrometallurgical products	27.6	45.0
Lead smelting and refining	8.8	11.0
Zinc smelting and refining	33.4	45.0
Aluminum production and refining	8.9	10.0
Refining of nonferrous metals, n.e.c.	55.7	66.0
Machine tools, metal-cutting types	17.2	23.0
Machine tools, metal-forming types	9.2	13.6
Ball and roller bearings	10.5	14.0
Instruments to measure electricity	8.9	13.0
Semiconductors and related devices	20.6	30.0
Electronic components, n.e.c.	8.0	11.5
Optical instruments and lenses	14.1	19.5

Source: Compiled from data of the U.S. Department of Commerce, Bureau of Industrial Economics

Reducing the likelihood of cost overruns could have important program effects on the defense effort. At least in the recent past, weapons projects with large cost overruns were most likely to be cut back (see Table 4). Those that kept closer to outlay targets were more likely to be continued as planned. Apparently, even in the military economy, there is some relationship between costs and quantities purchased!

Conclusions

In responding to the concerns over the continuing large federal deficits projected for the next several years, it seems proper to emphasize the desirability of another hard look at the spending side of the budget. Unlike a round of tax increases, restraining government expenditures is entirely consistent with the efforts to strengthen the private sector by reducing the federal government's claims on real and financial resources.

Official projections of future military outlays, in real terms, have risen successively during the last two years from 5 percent to 7 percent to 9 percent per annum. There seems to be little justification offered for the economic feasibility of this sharply upward movement. Indeed one may speculate as to what has changed in the international environment during 1981 and 1982 to justify the acceleration in defense spending.

Surely on the basis of past experience it seems advisable that a tough-minded attitude should be taken to military budget requests. That would only be comparable to the treatment of many civilian spending activities of the federal government. On the positive side, reducing the extent of cost overruns and bottlenecks in defense production will help to maintain the necessary support for the strengthened national defense that is required.

TABLE 4

COST OVERRUNS AND PRODUCTION CUTBACKS

Program	Percent Change in Unit Price (Jan. '81/Jan.'80)	Percent Change in Units Ordered (Jan. '81/Jan.'80)
Aircraft		
UH-60	+33	-19
F-16	+20	-20
EA-6B	+52	-33
F-14A	+9	no change
F-18	+44	-40
EC-2C	+13	no change
EC-130Q	+26	no change
P-3C	+43	-50
AH64	+67	-43
SH60B		
Missiles		
Patriot	+154	-67
MLRS	+23	no change
Pershing II	+19	no change
Hellfire	+322	-82
Pheonix	+30	no change
Harpoon	+14	no change
ALCM	+27	-8
GLCM	+39	no change
Tracked Vehicles		
Fighting Vehicle	+65	-23
XM-1 Tank	+49	-21
Divad	+95	-88
Ships		
SN688	+20	no change
CG47	+18	-33
FFG-7	+79	-75

Source: Congressional Budget Office, "An Analysis of President Carter's Budgetary Proposals for Fiscal Year 1982," January 1981.

Because of the potential capacity problems, a given cutback in nominal military spending would actually result in less than a proportional reduction in real procurement outlays. This would come about because of reduced price pressures on military purchasing generally.

My final point is a plea for balance in both economic and defense policy making. With the committee's indulgence, I would like to read the last paragraph of my book on the Economics of Peacetime Defense:

"The factors that contribute to or detract from a nation's security are numerous and varied; they include formal military strength in a very large and fundamental way, but as Vietnam vividly demonstrates, a large and well-equipped military establishment does not suffice. National security is something that is both more and less than formal military strength: the will and morale of the people. A society that shows itself capable of promptly recognizing challenges, domestic and international, and taking the often painful actions needed to meet them goes a long way toward demonstrating its basic strength. A society that meets its own standards of equity and fairness to its citizens simultaneously bolsters its overall security. It is a society well worth the necessary investment in arms to defend."

Representative HAMILTON. Thank you very much, Mr. Weidenbaum. Mr. Eckstein.

STATEMENT OF OTTO ECKSTEIN, PROFESSOR OF ECONOMICS, HARVARD UNIVERSITY, CAMBRIDGE, MASS., AND PRESIDENT, DATA RESOURCES, INC., LEXINGTON, MASS.

Mr. ECKSTEIN. Thank you very much, Mr. Chairman. Having gained my initial Washington experience as a member of the staff of this committee, it is always a special pleasure to have an opportunity to continue to participate in its work.

For the sake of time, I will not read my prepared statement. I assume it will appear in the record as submitted.

Representative HAMILTON. Both prepared statements will appear in the record in full, gentlemen.

Mr. ECKSTEIN. Let me deal with a few of the highlights in my prepared statement.

It became clear about 2 years ago, even in the dying days of the Carter administration, that a large increase in defense was about to come upon us. In these 2 years, since the first recognition of this inevitability, the economic situation has changed very much and the questions to be asked therefore have also changed.

Two years ago we were very much concerned about bottlenecks; not only bottlenecks in a few very specific items but fairly general industrial bottlenecks. Now we are sitting here with an economy, summarized in table 1 of my prepared statement, which shows how the environment has changed. The growth of GNP has gone from pluses to zeros. The deflator has been cut in half from 10 to 5 percent. Industrial production was growing very rapidly when we first had these concerns. Now it is falling very rapidly. Unemployment was 7.5 percent and it is now 10.8 percent. Manufacturing capacity was being used at 80 percent and now it is used at 68 percent. The Federal deficit was $50 billion roughly in late 1980 and now it is $180 billion.

So we are really in a different world than in which these concerns first developed.

We have run some simulations of the Data Resources model which crank in realistic defense outlook, and keeping in mind that Congress and the President really have come to a meeting of the minds on the overall numbers in the opening years and probably will keep on doing so, and what it shows, which is summarized in table 2 of my prepared statement, is that even with this defense buildup the real GNP doesn't grow all that fast; the deflator does not get dramatically worse; production indexes are modest; utilization rate does not hit 80 until 1986 and as recently as 1979 it was at that level; and the Federal deficit, of course, remains very large.

The subcommittee also very wisely asked us to look at this not just under the DRI forecast. We all recognize the difficulties of forecasting. So we looked at it, both in a weaker economy and in a stronger economy, and compared it to the forecast, but in realistic, not extreme ranges, to see the kind of things that could easily happen. It turns out the story does not change. The deficit changes, of course. In the sluggish case the deficit goes over $200 billion and stays there. In the positive case it finally drops to $139 billion, but the capacity utilization rate is not really high in any of these scenarios.

So the basic conclusion that a large defense budget can be accommodated in the economy, with the slack that it now has and the slack that will almost inevitably be retained for the next 3 or 4 years, seems pretty solid.

We then also looked a little bit at the job creation of the defense budget and it is clear that it does create jobs. All in all, as table 6 of my prepared statement shows, the total gain in defense jobs, direct and indirect, over these 5 years, comparing 1987 to 1982, amounts to about 1.1 million. That is not surprising. The share of GNP devoted to defense goes from 4.5 to 7.5 percent and with a 3-percent shift in GNP as a first approximation you would even get a much bigger figure because 3 percent of GNP would be 3 million people. But there is crowding out of something else, even in this happy case, and so the net increase in defense in employment created by defense is actually 1.17 million according to a very detailed analysis which DRI performed which it performs regularly, and which is summarized in tables 1 through 7 of my prepared statement.

Now that is all very well, but that is not the end of the story because what we have done so far is exactly the kind of analysis we would have at any time in the last 40 years. It is a straight Keynesian analysis, what if you spent more in defense and did nothing else? But that is not the kind of world we live in any more. It looks to me that a more realistic assumption is to assume that the Federal Reserve will fight its battle against inflation most of the time, that it will not accommodate the extra defense spending with extra money supply but will stick to some moderate, anti-inflationary target.

So, given a fixed money supply, even with the larger defense spending, it is inevitable that the defense spending will raise the interest rates; the activity levels will be higher; credit needs will be higher; and this higher increase in defense spending and higher interest rate will then have, even in a period of slack, some partial crowding out of civilian spending.

Now, in a way, the question really is not what difference will defense make to the economy. That is pretty clear. It is obviously going to be a big boost and we can use a boost. There are better things you might be able to do to boost employment and we do show some figures on what other methods produce. But in essence the difference is not very great and the million-plus is what you would get for any expenditure of this type—the million-plus employment.

But what you now are facing is a situation in which this defense increase is not paid for. After all, we had this enormous reduction in Federal taxes at the same time that we committed to the increase in defense spending and, in my opinion, that is the worst economic decision that we have made perhaps in 60 years.

When I was in the Government in 1965, we were justly pilloried for not raising taxes for the Vietnam war. We are now sitting here with a situation where the Government deliberately reduced the Federal tax revenues by about 30 percent, if you leave out social security taxes, and at the same time planned to raise defense spending by 3 percent of GNP which is about the same kind of magnitude you had in the Vietnam war.

So we are not paying for it and in a world of monetarism where the Federal Reserve does not accommodate this increased spending by easy money, and wisely so, that lack of willingness to pay does make a major difference to the economy.

Now, if you look at table 7 of my prepared statement, you see what happens if you do not pay for defense, and the way we tested this was to run a scenario, the realistic one where we don't pay, with one where we do pay, but not for all of it by any means. All we asked in this simulation was, What if we paid for the increase in defense that exceeded 3 percent? So we really did not deal with the whole budget problem. We tried to isolate merely the extraordinary increase in defense, that is the increase from 3 to 6 or 7 percent, and if we simply paid for that increment, you would have more investment because interest rates would be lower; about 3.5 percent more investment in 1988; and the capital stock would be somewhat larger. Because of that, you would have more aggregate supply, more potential GNP, to the extent of about a percentage point; and, of course, as a result of that, you would also have a little bit less inflation. The interest rates would be substantially lower and the whole economy would be in a substantially healthier state. The deficit would not be pushing $180 billion; it would be more like $60 or $70 billion; and all of that could be accomplished if we simply used a little commonsense and raised taxes to pay for these important commitments.

Now this is not the time nor place to examine the various means by which the Federal deficit could be reduced through higher taxes and lower civilian spending. We must recognize that the search and discovery of future revenue sources must be the central task of economic policy in the next few years.

The administration, the President, clearly is not willing to take on this task. It will not take the lead in finding these revenue sources and so the task falls upon the Congress. It is not an easy one, but it is an essential ingredient in preserving the longrun strength of this country, because if you refuse to pay for military spending you will in fact impair the growth ability of this country; and if you impair the ability to develop, you also impair the ability to muster resources in the long run for defense; you cut the increase in the standard of living of the American people, and you really totally defeat the original goals of the Reagan program which was to increase investment, to increase capital formation, and to resume the productivity trend. All of that is lost through the unwillingness to pay.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Eckstein follows:]

Prepared Statement of Otto Eckstein*

CAN WE AFFORD INCREASED DEFENSE SPENDING?

This Committee has invited me to present testimony on the affordability of defense in today's economy. My testimony will focus on two questions:

1) Can the economy accommodate the increase in defense spending as a part of aggregate demand, or will there be serious inflationary bottlenecks and rising prices?

2) What will be the effect on the long-term potential growth of the economy, viewed from the supply-side perspective?

THE DEMAND PERSPECTIVE

Two years after the parameters of the Reagan Administration's plans to expand spending on defense began to emerge, the program remains roughly intact despite various general and specific criticisms. Congress and the Administration have to date reached accord on both spending levels and particular programs basically consistent with the initial proposals advanced by the Administration, at least until the recent rejection of the MX missile basing system. The buildup thus underway will, if continued, increase the defense share of gross national product from its 1979 low of 4.6% to about 7.3% by 1987, with most of the incremental spending going towards weapons procurement programs designed to expand and modernize U.S. forces. In real terms, the spending levels currently planned for the coming years will be the highest in any peacetime period since World War II.

While the defense spending plans have remained little changed since they were announced two years ago, the economic environment within which they are being implemented has changed dramatically. These changes are reflected in the statistics summarized in Table 1, which compares the environment in late 1980 with that of today. In early 1981, the economy had resumed growth after the 1980 setback, with unemployment moderating and capacity utilization rising. Double-digit inflation remained the nation's primary economic problem.

Table 1

Changes in the Economic Environment

	1980:4	1981:1	1982:3	1982:4
Growth Rate For Real GNP (%)	4.3	7.9	0.0	0.2
GNP Deflator (Ann. Rate of Change (%))	10.5	10.9	4.7	5.4
Producer Price Index (Ann. Rate of Change (%))	9.0	10.6	6.5	4.5
Industrial Production Index (Ann. Rate of Change (%))	19.3	8.4	-3.3	-4.4
Unemployment Rate (%)	7.4	7.4	9.9	10.5
Manufacturing Capacity Utilization Rate (%)	79.1	79.9	69.7	68.4
Federal Deficit (Billions of dollars)	65.2	39.7	153.1	184.2

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*Coauthored by George Brown.

Today's economy stands in sharp contrast to this earlier environment. The concern regarding inflation has been attenuated by the progress made in cutting the rate of price increase in half, with no prospect of an early resurgence. It has been at least temporarily replaced with well-justified alarm over the deepest recession since the thirties. The economy has not grown in three years now, pushing unemployment near 11%, and the prospects for immediate recovery are most uncertain. The utilization of the nation's productive resources, both labor and capital, are at the lowest levels of recent decades. Unemployment is likely to exceed 8% in 1985, and industrial utilization will still be below 80%. In addition, the size and persistence of the Federal deficit has now emerged as a major problem confronting Congress and the Administration.

The initial questions regarding the proposed defense buildup, from an economic perspective, focused on determining whether these increased levels of DOD spending, in combination with other elements of fiscal policy and private activity, would lead to economy-wide bottlenecks, add even further to inflationary forces, produce lengthening lead times and supply constraints.

The near-term answer to that question is now clear. Today's high levels of unemployment and low levels of capacity utilization have created a climate within which significant expansion of defense spending can occur with a minimum of such adverse consequences. This situation should persist through at least the middle of the decade.

Table 2 summarizes the results of three simulations constructed using the Data Resources Model of the U.S. Economy. The base case represents the path likely to be taken by the economy unless changes occur in policy or are induced by other exogenous forces. The other two scenarios, one showing more robust growth over the simulation period and the other a more sluggish recovery from the 1982 recession, differ principally with respect to their assumptions regarding consumer behavior, the dimension of overall economic activity most likely to determine the shape of the recovery. Real consumption between 1983 and 1987 shows average annual rates of 2.6% in the ROBUST scenario, 2.2% in the BASE scenario, and 1.9% in the SLUGGISH scenario. Defense spending levels and other fiscal and monetary policy variables are held constant across the three scenarios at levels consistent with recent legislation and policy. The defense share of gross national product thus differs by 1987 by about 0.3 percentage points between the ROBUST and SLUGGISH scenarios as a result of differing levels of overall economic activity.

While the paths taken by the economy differ across these scenarios, none of them suggest any cause for alarm regarding the impacts of defense spending. Even under the ROBUST scenario, unemployment and capacity utilization show slack relative to the levels prevailing in 1979, and the progress made against inflation is generally sustained. Under the SLUGGISH scenario, both resource utilization and inflation remain quite low even at the end of the simulation period. The Federal deficit remains large in all three cases, and only shows signs of decline under the ROBUST scenario. Obviously, high levels of defense spending contribute to this deficit.

The present magnitude of the nation's unemployment problem suggests further examination of the defense employment multiplier. We estimate that about 35,000 additional jobs would be created in 1983 per $1 billion in defense outlays, with this statistic dropping to about 31,000 by 1987 as the economy begins to expand. These additional jobs include both those involved in direct production for defense and those relating to other dimensions of economic activity resulting from the stimulus given to the economy by such spending.

Table 2

Projections Under Three Alternative Economic Scenarios

	1982	1983	1984	1985	1986	1987
Real Gross National Product (Annual Rate of Change (%))						
Robust	-1.7	2.2	4.5	4.4	4.2	4.0
Base	-1.7	2.1	3.8	3.5	3.7	3.5
Sluggish	-1.7	2.1	3.0	3.1	3.5	3.3
GNP Deflator (Annual Rate of Change (%))						
Robust	6.0	5.2	5.7	6.2	6.3	6.3
Base	6.0	5.2	5.7	6.1	6.1	6.0
Sluggish	6.0	5.2	5.6	6.0	5.9	5.8
Wholesale Price Index (Annual Rate of Change (%))						
Robust	2.0	3.5	6.9	7.7	7.2	6.6
Base	2.0	3.5	6.7	7.2	6.6	5.9
Sluggish	2.0	3.5	6.6	6.9	6.3	5.6
Industrial Production Index (Annual Rate of Change (%)						
Robust	-7.9	2.5	8.2	6.5	5.6	5.3
Base	-7.9	2.1	6.7	4.7	4.9	4.2
Sluggish	-7.9	2.1	4.9	4.1	4.5	3.9
Unemployment Rate (%)						
Robust	9.7	10.1	8.9	7.9	7.2	6.6
Base	9.7	10.1	9.1	8.5	7.9	7.5
Sluggish	9.7	10.1	9.3	8.9	8.5	8.0
Capacity Utilization Rate—Manufacturing (%)						
Robust	70.0	70.7	75.5	78.9	81.3	83.1
Base	70.0	70.4	74.1	76.3	78.3	79.5
Sluggish	70.0	70.4	72.8	74.6	76.4	77.4
90-Day Treasury Bill Yield (%)						
Robust	10.5	8.5	8.6	9.3	9.7	9.2
Base	10.5	8.4	8.4	9.0	9.4	8.9
Sluggish	10.5	8.4	8.3	8.9	9.3	8.8
Federal Deficit (Billions of dollars)						
Robust	143.8	180.0	163.1	159.1	157.8	139.1
Base	143.8	181.7	173.1	182.8	191.6	186.7
Sluggish	143.8	185.3	182.7	200.1	214.7	215.8

There has been considerable debate of late regarding the questions of whether defense spending creates or costs jobs. Between the alternatives of spending on defense or not spending on defense, it is clear that additional spending will lead to additional jobs for at least some period of time. At the same time, however, it remains true that other types of spending can create more jobs than can defense spending. This fact is a natural outgrowth of the nature of today's distribution of defense spending.

Table 3 shows the distribution of private non-agricultural production for both defense output and total output (including defense output). The distributions are quite different, with a majority of defense production coming from the durables manufacturing sectors of the economy versus under one-fifth of overall production. The shares of output coming from the services, wholesale and retail trade, and non-durables manufacturing sectors are much lower for defense. It is the labor-intensity of these sectors of production which determines the jobs multipliers of various types of private and governmental spending.

Table 3

Sectoral Distribution of Private Non-Agricultural Production
(Percent)

	Defense Production	Total Production
Construction	5.7	6.7
Finance, Insurance & Real Estate	3.4	15.6
Mining	1.6	1.4
Transportation & Utilities	9.2	9.5
Services	12.1	18.2
Wholesale & Retail Trade	3.6	11.4
Nondurable Manufacturing	8.2	17.8
Durable Manufacturing	56.1	19.4
Total	100.0	100.0

Estimates of the employment to output ratios for the same eight sectors of the economy are shown in Table 4, measured in terms of thousands of jobs per $1 billion of output. The services and trade sectors are by far the most labor intensive. Spending programs or tax incentives designed to stimulate activity in these areas will clearly produce more jobs than would be the case for programs targeted elsewhere in the economy.

Table 4

Sectoral Employment to Output Ratios
(Thousands of jobs per $1 billion of output)

Construction	17.1
Finance, Insurance & Real Estate	8.8
Mining	3.4
Transportation & Utilities	9.4
Services	38.2
Wholesale & Retail Trade	28.3
Nondurable Manufacturing	7.4
Durable Manufacturing	12.4

The differences in the direct employment impacts of defense spending and overall spending (each assuming incremental spending distributed similarly to the base) are shown in Table 5, which shows the additional jobs in each of the eight sectors resulting from $1 billion of additional activity. The direct defense employment impacts are slightly smaller than the overall average, and the distribution is weighted towards employment in durables manufacturing, a sector within which employment growth has been particularly low, indeed negative since mid-1981.

Table 5

Direct Employment Impacts of Additional Production (Thousands of jobs per $1 billion additional output)

	Defense Production	Total Production
Construction	0.987	1.140
Finance, Insurance & Real Estate	0.302	1.374
Mining	0.053	0.047
Transporation & Utilities	0.863	0.896
Services	4.645	6.970
Wholesale & Retail Trade	1.032	3.223
Nondurable Manufacturing	0.607	1.315
Durable Manufacturing	6.957	2.407
Total	15.437	17.371

Taking into account planned shifts in the composition of defense outlays and productivity increases projected for various sectors of the economy, we project that continued implementation of the defense buildup would yield 1.17 million additional jobs over the next five years within industries producing directly or indirectly for the defense end market, assuming nearly accommodating monetary policy. Table 6 displays projections of employment by major sector of the economy, with the defense-related component of each sector's employment shown separately. The rapid 8.2% annual rate of increase in defense employment projected represents a major structural change within the nation's labor markets, one which will clearly require significant additions of skilled labor groups to the work forces of the defense-supplying industries. About half of the new defense-related jobs will be created within the durables manufacturing sectors.

The final column in Table 6 shows the magnitude of the influence which defense spending will have on the distribution of the labor force over the next five years. Fully 15.7% of the new jobs which will be created over the 1982-1987 period will be in positions producing defense output, and over half of the new jobs in the durables manufacturing sector will be related to defense production. It is clear that decisions on defense budgets will have important impacts on the composition of the labor markets of the 1980s.

The outlook for the economy is always uncertain, so consequently developments could be better or worse than shown in the above materials. We do know, beyond a reasonable shadow of a doubt, that the economy will be in a slack state for the next three years, through 1985. Thereafter, a substantially more favorable path for the economy than portrayed in the DRI forecasts could bring the economy closer to full employment and high resource utilization, changing the prospects for defense-induced bottlenecks and inflation. Consequently, the economic effects for the years 1986 and 1987 should be treated as rather more uncertain, and the option to modify defense spending to avoid serious inflationary damage to the economy must be left open. It also is important to develop an adequate industrial base for defense production so that the large program for the final years of the decade can be produced effectively without damage to the economy.

Table 6

Defense Interindustry Forecasting System
Employment Forecast Summary
(Millions of persons except as noted)

	1982		1987		Avg. Ann. % Growth		
	Defense	Total	Defense	Total	Defense	Total	Defense Share of Growth (%)*
Total Nonagricultural Employment	2.41	90.34	3.58	97.76	8.20	1.59	15.70
Construction	0.20	6.11	0.30	6.47	8.78	1.14	29.00
Finance, Insurance & Real Estate	0.05	5.52	0.08	6.03	8.94	1.79	5.70
Mining	0.02	0.67	0.03	0.72	7.46	1.36	22.06
Transportation & Utilities	0.17	4.72	0.22	5.02	5.28	1.23	16.63
Services	0.55	25.19	0.81	28.06	8.23	2.19	9.23
Wholesale & Retail Trade	0.10	14.05	0.16	15.13	9.47	1.45	5.39
Federal Government	0.00	2.74	0.00	3.15	NC	2.89	0.00
State & Local Government	0.00	13.04	0.00	13.86	NC	1.22	0.00
Manufacturing	1.32	18.27	1.97	19.32	8.34	1.12	62.12
Nondurable Goods	0.11	7.25	0.15	7.20	7.16	-0.12	NM
Food & Products	0.01	1.74	0.01	1.72	5.13	-0.20	NM
Tobacco Products	0.00	0.06	0.00	0.06	7.24	-0.80	NM
Textiles & Products	0.01	0.55	0.01	0.58	5.39	1.00	7.50
Apparel & Products	0.01	1.40	0.01	1.21	5.36	-2.92	NM
Paper & Products	0.01	0.65	0.02	0.68	7.45	0.75	21.76
Chemicals & Products	0.03	1.03	0.04	1.09	7.64	1.15	20.91
Printing & Publishing	0.01	0.71	0.01	0.71	6.01	0.18	58.40
Petroleum Products	0.01	0.22	0.01	0.22	5.28	0.16	145.09
Rubber & Plastic Products	0.02	0.67	0.03	0.73	10.33	1.66	20.86
Leather & Products	0.00	0.22	0.00	0.21	5.51	-0.99	NM
Durable Goods	1.21	11.03	1.82	12.12	8.44	1.91	55.50
Lumber & Wood Products	0.01	0.59	0.02	0.67	9.17	2.56	8.00
Furniture & Fixtures	0.00	0.45	0.01	0.49	4.28	1.41	3.13
Stone, Clay & Glass	0.02	0.59	0.03	0.61	8.91	0.77	38.25
Primary Metal Industries	0.07	1.06	0.11	1.10	8.39	0.63	105.46
Fabricated Metal Products	0.12	1.52	0.19	1.62	8.33	1.28	61.38
Nonelectrical Machinery	0.09	2.18	0.13	2.38	8.33	1.75	22.34
Electrical Machinery	0.37	2.00	0.57	2.31	9.02	2.92	64.86
Transportation Equipment	0.47	1.70	0.69	1.92	8.08	2.45	102.02
Instruments & Parts	0.05	0.54	0.07	0.61	8.37	2.52	33.51
Miscellaneous Manufacturing	0.00	0.39	0.01	0.42	6.07	1.27	5.21

* Entries in excess of 100% indicate increases in defense employment offsetting declines in nondefense employment.
NM denotes not meaningful. NC denotes no change.

A SUPPLY-SIDE PERSPECTIVE ON THE DEFENSE PROGRAM

The above analysis was conducted in a generally Keynesian framework. The monetary policy was at least partially accommodating so that the fiscal multipliers could be sizeable and relatively permanent. The increase in total aggregate activity created by defense spending then becomes the dominant result, and given the slack that is in prospect for the next few years, this increase in activity is accommodated with relative ease.

It would, however, be an incomplete analysis to leave the matter at that point. Monetary policy is likely to be governed by monetarist principles under which the Federal Reserve does not accommodate the increased defense spending or the potentially induced increase in nominal and real GNP. Under this condition, defense spending crowds out private spending even in the period of general slack as long as private resources are not released to the defense sector through taxation.

In the current circumstance, it must be recognized that we have chosen the path of a massive increase in defense spending without asking the public to pay for it. The President combined his defense program with the largest peace time tax cuts in American history, a collection of cuts, which as finally enacted by the Congress, reduced the non-Social Security Federal taxes by about 30%. This is the origin of the enormous deficit problem and forces us to consider the question to what extent the growth of aggregate supply, i.e., the long-run growth of the economic potential of the country, will be damaged by a defense boom that is not paid for. To assess that question, two simulations were conducted, one in which the defense buildup is paid for through personal income taxes, the other in which it is financed through deficits. In both cases, the Federal Reserve holds the money supply to the same growth rate, a realistic assumption which allows the supply-side effects to emerge clearly.

Table 7 summarizes the difference between the two solutions. With the defense bill paid for by personal income taxes, resources are principally drawn from consumption, leaving the rate of capital formation more or less intact. If the defense budget is not paid for and the deficit is allowed to increase, interest rates are driven up by the combination of increased activity initially created by defense spending and by the monetarist policy. This substantially reduces the volume of house building and automobile sales and, to a lesser extent, also reduces the rate of business fixed capital formation. Defense spending under this—alas realistic—assumption, does crowd out investment, which, after all, was one of the principal goals of the Reagan program.

It takes a long time for the supply-side effects to make themselves felt. By the final year of the simulation, 1988, potential GNP, or aggregate supply, is reduced by 0.9% and the differences grow in subsequent years. This loss of potential GNP growth reduces the country's ability to meet its needs whether for rising living standards, increased capital formation to maintain our competitive place in the world, or even to meet future defense bills.

The failure to pay for defense can thus be seen to be a very damaging economic policy. We can afford the defense we need, but if we refuse to pay for it we will, in fact, damage the future development of the U.S. economy.

This is not the time or place to examine the various means by which the Federal deficit could be reduced through higher taxes or lower civilian spending. We must recognize that the search and discovery of future revenue sources must be the central task of economic policy for the next few years. The Administration clearly is not willing to take the lead in the matter, so the task will fall upon the Congress. It will not be an easy one, but it is an essential ingredient in preserving the long-run strength of the United States.

Table 7

The Price of Not Paying for Defense:
High Defense Growth With no Offsetting Tax Increase Versus High Defense Growth With Tax Increase*

	1985	1986	1987	1988
	Difference Between No Tax Increase Scenario and Scenario With Tax Increase			
Real Demands				
Potential GNP Loss:				
Level (Billions of 1972 dollars)	-2.6	-6.7	-11.9	-17.9
% Difference	-0.1	-0.4	-0.6	-0.9
Difference in Growth Rate	-0.1	-0.2	-0.3	-0.3
GNP Loss:				
Level (Billions of 1972 dollars)	0.8	-1.3	-3.5	-5.8
% Difference	0.0	-0.1	-0.2	-0.3
Difference in Growth Rate	0.0	-0.1	-0.1	-0.1
Consumption Gains:				
Level (Billions of 1972 dollars)	2.6	3.7	6.1	9.0
% Difference	0.2	0.3	0.5	0.8
Reduced Business Fixed Investment:				
Level (Billions of 1972 dollars)	0.0	-0.7	-1.8	-3.4
% Difference	0.0	-0.4	-0.9	-1.6
Reduced Residential Fixed Investment:				
Level (Billions of 1972 dollars)	-1.0	-2.5	-4.7	-7.0
% Difference	-1.6	-3.8	-7.0	-10.1
Sectors				
Automobile Sales:				
Level	-37,000	-170,000	-293,000	-538,000
% Difference	-0.4	-1.6	-2.7	-4.8
Housing Starts:				
Level	-39,000	-89,000	-163,000	-228,000
% Difference	-2.2	-5.0	-9.0	-12.4
Reduction in Nation's Capital Stock (Billions of 1972 dollars)				
Producers' Durable Equipment	0.2	-0.2	-1.1	-2.7
Non-residential Structures	0.0	-0.3	-1.0	-2.3
Inflation and Unemployment				
Unemployment (Difference in Rate)	-0.1	-0.1	-0.1	-0.2
GNP Deflator (% Difference)	0.1	0.2	0.3	0.5
Higher Interest Rates (Difference in rates)				
Federal Funds Rate	0.91	2.05	3.26	5.13
Avg. Yield on New Corporate Bond Issues	0.44	0.88	1.55	2.21
Larger Deficit (Difference in level)	-16.6	-40.0	-74.9	-122.6

* The tax increase was designed to increase personal income taxes dollar for dollar with the rise in military spending.

Representative HAMILTON. Thank you, Mr. Eckstein. So all we have to do is increase the taxes in the Congress; is that it? It is a very simple task for us, as you know. I take it both of you do not have too many worries about the impact of defense spending in the short term, and I mean when I say the short term, 1983–84. Both of you seem to agree that the problems are going to come down the road. Is that a fair impression?

Mr. WEIDENBAUM. Yes, but the decisions on the military budget in 1982 and 1983 are going to affect where we are down the road.

Representative HAMILTON. Right. Now you come to very different conclusions, of course, as to where the emphasis ought to be in dealing with our problems. Mr. Weidenbaum, you emphasize that the spending side of the budget is where we have to focus our attention. Mr. Eckstein comes to the conclusion that we have to find new future sources of revenue. And that, of course, is a marked difference in your approach here that stands out to me.

What is your comment, Mr. Weidenbaum, on Mr. Eckstein's observation that you—when I say you, I mean the administration—has made the worst economic decision in the last 60 years? Do you agree with that observation?

Mr. WEIDENBAUM. No, I don't. I wouldn't draw comparisons quite over that long a period of time, just back to 1966 when Mr. Eckstein's administration was pilloried but apparently not pilloried enough; but I am trying to be constructive. I view the Reagan economic program as not yet fully carried out. I am looking at a table I prepared comparing President Carter's outlay estimates for 1982 to 1986 in constant dollars with the latest Reagan administration numbers. It is clear that there have been important shifts in priorities. But there has not been, net in real terms, a significant slowing of the spending, of the outlays as estimated by the outgoing administration.

So I think there is a major job to be done on both ends of Pennsylvania Avenue in terms of slowing down what is still a vey rapid growth of real Federal spending.

I think tax increases in a sense—they are not easy, but they are an easy way out. They detract attention from the need to give a tough review to many parts of the Federal budget, military and civilian.

Representative HAMILTON. You have just come through your experience as Chairman of the Council of Economic Advisers. You have learned how tough it is to cut budgets up here in Washington. Do you really think we can handle the fiscal problems ahead of us in the next few years on the spending side of the budget alone?

You have a President now that is as committed to cutting spending as any President has been in recent years. We will all agree to his credentials at that point. He has worked mightily at it. And yet, by your own acknowledgment, say that you really have not slowed the growth of Federal spending.

Is it realistic to think that in the next few years with deficits like we are confronting here and increases in defense budgets and all that, that we can cut that budget significantly so that you can have a real economic impact or are we whistling Dixie?

Mr. WEIDENBAUM. I think the answer is yes. But it is not going to be easy. I think the key to it is not picking on one or two areas. I think it is fashionable to talk about cutting defense and/or cutting entitlements. I think if the budget restraint effort has any chance at succeeding, it has to be comprehensive. And, frankly, I spent enough time in that budget review process to come away with the feeling that there's so much potential for further cuts in just about every department and major agency in the budget. What will make it more feasible is that the fact that you are not picking on any one or two constituencies.

Representative **Hamilton**. It is not a question in my mind of whether it is feasible or whether it is there. It is a question in my mind of whether it is achievable in the political process? And that is why I direct the question to you because you have just come through that experience and I know you have wrestled with it very mightily.

Mr. **Weidenbaum**. In 1981 we came closest to achieving a comprehensive array of budget cuts, certainly in the civilian areas just because it was comprehensive. That is the lesson we learned. In a sense, it was a reversal of traditional wisdom that said just go after one or two areas at a time, otherwise all the special interest groups will gang up on you. We saw the reverse of that.

DEFENSE SPENDING DANGERS

Representative **Hamilton**. Looking down the road on this defense spending, I want to get a sense of where you see the dangers. You hear about so many different things. You hear about bottlenecks, inflation, skilled labor, and capital formation. Given your projections for the economy, which at least in the next several years are not projecting strong recovery, given the projected defense increases, where would you see the real problems developing? What worries you the most with regard to the increase in defense spending?

I address that to both of you.

Mr. **Weidenbaum**. Deep down my concern does not deal with these economic projections at all but something very subjective. I have to say it is very subjective—I come away with the judgment that to my knowledge defense budgets have not experienced the same tough-minded review that many civilian departments have. Departments such as Education, Labor, Health and Human Services, Housing and Urban Development—at least major parts of those departments—have experienced very tough—and I think properly so—budget reviews. The reductions in their requests demonstrate how tough those reviews are. I do not see the same standard applying to many other departments and agencies, including the military.

Representative **Hamilton**. I want to come back to you on that and ask you why, but let me ask Mr. Eckstein to answer the question.

Mr. **Eckstein**. Well, apart from this kind of macro issue that I raised in my testimony, my biggest concern is really on the human investment side. In the 1950's we put a lot of our best high technology work into defense; in the 1960's, a lot of it in the space program; in the 1970's, we really gave the civilian industry more of a chance and scored tremendous breakthroughs in electronics and computers and medical technology and biogenetics and all the rest.

With the pattern of economic development which is now built in here with this defense budget, the best engineers, the best scientists will again be working on defense.

Now there is a dire necessity, I suppose. There is no other way to achieve this kind of defense buildup without that diversion of scientific talent, but we also at the same time in our budget cutting on the civilian side are undercutting our support of research and development, our support of training and fellowships, and new scientists. If we did not have the foreigners from lots of countries to help us with this scientific work, we could not get it done even now.

Representative HAMILTON. In the scientific world you say——

Mr. ECKSTEIN. In the scientific world, where the element of immigrants or temporary immigrants even now is already very large; and if we now devote many thousands of people incrementally to defense and at the same time starve the underpinning of education and R&D, we are going to create a situation where we will lose out to Japan and to other countries who are not making these defense commitments whose best brains are devoted to competing in the world markets with high technology products. That is my biggest concern. Now there are other concerns.

DEFENSE SPENDING AN INDUSTRIAL POLICY

Representative HAMILTON. Excuse me. Defense spending then becomes a kind of industrial policy in effect, does it not? I mean, it is a decision by the Government to divert skilled resources in a certain direction and that direction is the skills that you need to keep your defense industrial base prospering.

Mr. ECKSTEIN. Absolutely. And, of course, that does include a very substantial slice of really powerful scientific minds. It is not just skilled workers; it is Ph. D. physicists and the best electrical engineers and all the rest who have been working on other things.

Representative HAMILTON. Right.

Mr. ECKSTEIN. So that is really in the long run the most worrisome aspect of the whole defense buildup to me, vis-a-vis our competitors if you look 20 years down the road.

The second area, of course, is to provide the industrial base for the defense figures of 1987–88. By that time the defense budget is very large and at the moment I think there are shortcomings in the industrial base. We really could not spend that kind of money today and we really have to think through the growth of capacity in the defense area, and ultimately I suppose the defense industry will come back for subsidies to build factories and what have you.

The third area of concern is, again in certain high technology places. We are going to have a lot of imports because we simply will need the goods. You are going to find some little bottlenecks, but I think that is a very tertiary matter.

DEFENSE BUDGET DOESN'T RECEIVE THE SAME KIND OF SCRUTINY AS THE DOMESTIC BUDGET

Representative HAMILTON. Let us go back to that question about the defense budget. Why does that happen? Why does not the defense budget get the same kind of scrutiny as the domestic budget does?

Mr. WEIDENBAUM. I am not sure if I can really give a clear answer. On the positive side, in the civilian departments, we are dealing with established programs. It is clear what their shortcomings are. In the military, especially when you are dealing with weapon systems, you are talking about evaluations of Soviet threats, alternative ways of responding to the threats, and weapon systems are still on the drawing board. It is much more elusive. It is much more judgmental, if you will.

Representative HAMILTON. Are you folks down at the White House kind of awed by the military?

Mr. WEIDENBAUM. I can't speak for them, you appreciate. I hope not.

Representative HAMILTON. Well, you know, we see your public statements. I think you said that in one of the interviews in U.S. News, and we remember Dave Stockman's comment in the famous Atlantic Monthly article last year, and some of us up here on the Hill have the impression that you just accept the figure from the Defense Department and send it on out.

Mr. WEIDENBAUM. Oh, that certainly, in my experience, has not been the case.

Representative HAMILTON. It is a little overstated?

Mr. WEIDENBAUM. Yes, indeed.

SIZE OF THE INCREASE OR THE PACE IN DEFENSE SPENDING

Representative HAMILTON. Is it the size of the increase in defense spending that bothers you or the pace of it? Again, that is directed to both of you.

Mr. ECKSTEIN. Well, it is really very hard to distinguish the two. The figures go up very fast. But if you are going to do this over 5, 6 or 7 years you really need that trajectory. But you know, to return to your previous question, Henry Kissinger in his memoirs reports that he never opposed a weapons system, that he felt it was a matter of symbolic support that in his role as National Security Adviser he would back all military systems. And I think there is an element of that in the current administration as well. They essentially are backing all systems, making no choices, at least at the big weapon system level, and I think there is a kind of citizens' lack of faith that the systems will in fact work, that they will be effective. So there is that concern about the quality.

Representative HAMILTON. Do you have any comments?

Mr. WEIDENBAUM. No.

DEFENSE AS A SHARE OF GNP

Representative HAMILTON. The fact that the defense as a share of GNP has fluctuated considerably over the last few decades—we have it here on one of these charts, the top one there [indicating], it has gone down actually. In 1982 it was 5.9 percent. How significant a figure is that? The President cites that frequently to justify his sharp increases in the defense budget. How much weight do you put on that?

Mr. WEIDENBAUM. Well, negatively I get some value out of that. That says that if you look at the total defense program as currently planned, it certainly involves shares of the economy smaller than defense has preempted in previous years. So in the aggregate, if it is desirable, it is double. But, very frankly, that is a variation of a theme that almost every economist who has looked at national security has come up with. That is, we can afford the defense we need and we are primarily a civilian economy and defense spending, when you look at it, is marginal. I suggest it might be more meaningful to look at military procurement in relation to business investment, civilian hard goods, so to speak. You get much larger proportions and, as Mr. Eckstein noted, if you look at research and development, you will see higher proportions yet. So in terms of the overall economy, we remain clearly a civilian economy, but if you look at the key forces for growth—R&D, capital investment—the military looms much larger.

Mr. ECKSTEIN. It is a large buildup. That is, you can emphasize the level keeping in mind that in the peak year we were fighting a war and had a lot more people under arms and were spending ammunition and fuel to fight the Vietnam war, and even in 1964 we were getting ready for that.

In any event, the mix of the military budget has shifted and is going to shift a lot more toward procurement and R&D so that the impact on that element of the economy will really be quite significant.

So, yes, it is true, we have spent a lot more in the past; but nonetheless, this is a very big economic development we are dealing with here, this pickup from 5 to 7.3 percent, and how we manage it both in terms of industrial detail and in terms of financing is going to make a big difference to economic performance.

PENTAGON COST ESTIMATES FOR FUTURE WEAPONS SYSTEMS

Representative HAMILTON. Let me ask you about the recent media articles reporting on the estimates within the Pentagon of future cost of buying these weapons systems. Those articles suggested that the Pentagon really is underestimating rather seriously the cost of the buildup and instead of the $1.6 trillion, it is going to be very substantially above that.

What is your reaction to that? Do you respond to that kind of a study saying, yes, he is right on the target; he is on the mark? Do you agree with it or do you have elements of disagreement with it?

Mr. ECKSTEIN. Well, I have two concerns in this estimation area. One is that weapons systems have always been underestimated and you have to put in that fudge factor corrected for inflation even of 20 or 30 percent—I think it is a very modest estimate and all other things costing more. That is even ignoring the price level question.

But there is another concern that has not been so widely reported that bothers me. When I analyze the defense budget, I find that the provision for operation and maintenance in the outyears is extremely low, that the personnel pay area is really quite low, and indeed if these weapons systems were actually procured and our troops were to be trained to use them—I'm speaking of the nonnuclear, of course—they will have to come back for seconds on operation and maintenance.

If you look at the success of the Israeli forces in their recent war, one reason is because they use their weapons all the time, they try them, they train their people day in and day out. Their planes fly every day. Their pilots fly every day. Ours do not fly every day, neither the planes nor the pilots. So we continue to follow a pattern that has been going on for 20 years here of systematically underbudgeting for operation and maintenance and personnel and overbudgeting for procurement.

Mr. **Weidenbaum**. I certainly do not quarrel with anything Mr. Eckstein has said. I just emphasize the fact that at least in the past—and I have not read those articles—underestimating weapon system cost is a nonpartisan phenomenon. Table 4 of my prepared statement analyzes, using CBO data, President Carter's experience. The fact is that there is a history in one direction—underestimating the cost.

MILITARY PAY STRUCTURE

In my statement I have a way that I suggest to deal with the personnel cost, the maintenance point just raised. It would take a different way of looking at the structure of military pay. I think the very basic notion which is just standard in the private economy of paying more for skills in short supply and less for skills in surplus is a key way of dealing with the cost pressures in the operations and maintenance area.

Representative **Hamilton**. I keep asking myself when you make that kind of suggestion how can we really achieve reforms in that area? This Federal pay structure, both military and civilian side, is so rigid, so difficult to deal with, what kind of changes are you suggesting for us here?

Mr. **Weidenbaum**. Actually, the Pentagon in the last couple of years has begun moving in that direction. Maybe it is under the guise of the bonuses, but paying a bit more one way or another to attract and maintain people in high skilled military occupational specialties which are in short supply. That leeway needs to be expanded so that pay increases are not across the board but reflect supply and demand of manpower in the various skill categories.

MILITARY PENSIONS

Representative **Hamilton**. What would you have us do with the pensions?

Mr. **Weidenbaum**. Pensions, if we have learned anything from our social security experience last year, phase in the change. Don't take people by surprise. But I think the basic change, looking toward the future, is to get away from the 20-year retirement at generous pay. If people retire at the end of 20 years, the pension should come in when they leave the labor force, not when they leave the military labor force. I think you have to deal with the double and triple dipping in a very fundamental way. The notion of people getting full retirement when they are 40 is silly. It needs to be fundamentally changed.

Representative **Hamilton**. Do you have any comment on that, Mr. Eckstein?

Mr. **Eckstein**. No; I really do not.

APPROPRIATE RATE OF INCREASE FOR DEFENSE

Representative **Hamilton**. What about the buildup now in the dollars on the defense side? They go up very rapidly. Fiscal year 1982, $214 billion in obligational authority; $182 in outlays. You get up there in 1987 at levels on $400 on the total obligational authority and $356 on outlays. Would it be your general recommendation that the pace is too rapid and you would prefer to see a stretchout? The question really is, What is the appropriate rate of increase for the next few years?

Mr. **Weidenbaum**. I call for a hard nose review of the military budget. I do not mean to prejudge the results of that review. But one counterpoint I would like to make, the standard response is, well, you can cut TOA very substantially for procurement of major weapon systems but it will have an insignificant effect on outlays in 1982 and 1983.

As far as I am concerned, that is merely a debater's point. If anything, that is a plus, not a minus, given the weak economy in 1982, and the not very robust economy in store for 1983. That is the timing twist that I talk about. The actions on TOA this year and next year will have very little effect on the outlays in the next couple years, but they will have a powerful effect on outlays in 1985 and 1986 and 1987 which coincides with the period that Otto Eckstein alerts us to for potential economic capacity concerns.

Representative **Hamilton**. Those are impressive figures you had about the percentages of costs for the weapons systems like aircraft and others, just a few percentage points.

Mr. **Weidenbaum**. Two percent of the shipbuilding is spent the first year; I guess 4 or 6 percent for tanks; only 10 percent for aircraft.

Mr. **Eckstein**. Mr. Chairman, may I respond to that also? I would prefer they make choices rather than stretch everything out because in fact we are trying so many different weapons systems there is a lot of doubt out there. There is also a question whether these weapons systems tie into any really coherent, realistic strategy of what we are really trying to accomplish with our defense budget.

Representative **Hamilton**. So you would like to knock out certain weapons system like the B-1 I presume?

Mr. **Eckstein**. I don't have any one system because I am not a military expert, but certainly there are questions raised about a lot of them. The current Newsweek really accounts for them one at a time. That looks to me more promising than to start them all and then procure them in a very inefficient form which stretch-outs sometimes produce.

Representative **Hamilton**. Let me go to your comments in your statement, Mr. Eckstein, on job creation. I would like you to elaborate a little bit on that for me if you would.

The defense industry obviously creates jobs but it does not create jobs to the same extent that the civilian industry does. Is that too broad a statement?

DIFFERENCES IN THE DIRECT EMPLOYMENT IMPACTS OF DEFENSE SPENDING AND OVERALL SPENDING

Mr. **Eckstein**. Yes; it is a correct statement, but it is not a very strong statement. If you turn to table 5 of my prepared statement, you see that per $1 billion of additional activity you get about 15,000 jobs in defense and 17,000 on average in everything including defense. So the difference is not all that great.

There are clearly low wage sectors where you hire a lot of people per $1 billion and there are other high wage sectors. The difference between defense and the rest is not two-to-one or anything of that sort. There is a modest difference.

Clearly, if your main goal were to create jobs, you would not spend it on defense. You would spend it on low wage people as best you could and, of course, we all agree that you would not do defense to stimulate the economy. The system is not that sick that we have to use defense as a WPA. If we want to raise employment we can do it in other ways. You judge defense on its own merits and manage it as well as you can and finance it properly and that's the right thing to do.

Representative HAMILTON. Do you agree with that observation, Mr. Weidenbaum?

Mr. WEIDENBAUM. Yes; I would emphasize the point that so much—and that explains why you get fewer jobs per billion dollars in defense—so many jobs are in the areas not of great surplus but of closer to capacity; that is, engineers, scientists—that Congress should fund the defense program we need for national security, but not because of the needs of the economy.

PARTICULAR AREAS OF WASTE IN THE DEFENSE BUDGET

Representative HAMILTON. All right. I wonder if you have any particular areas of the defense budget that you would single out where you think there is a lot of waste?

Mr. WEIDENBAUM. The short answer is no. If I can elaborate, one of the things that keeps me going is so many of my friends in what my students call the military-industrial complex informally in recent years have urged me to continue this line of inquiry. I find very compelling that people who are in the defense industry or people recently retired from the military share the concerns that we have expressed today. At least they do so informally when you talk with them, when I do.

Representative HAMILTON. Do you have any impressions on that, Mr. Eckstein?

Mr. ECKSTEIN. Well, I am an amateur on that subject, so I am a little loathe to comment on it.

Representative HAMILTON. There are no restrictions on amateurs commenting, Mr. Eckstein. Go ahead. We do not have any such rule in the Congress, so go ahead and comment.

Mr. ECKSTEIN. I have never understood the money we spend on the reserves. We seem unable to ever activate them. We got all through the Vietnam war without use of reserves. I still do not understand why we continue to rely on that in theory if not in practice.

Representative HAMILTON. I do not know that I got from you any particular figures about how much defense spending should be cut in order to significantly contribute to the problems that you see coming up. Have you thought of it in those terms at all? If you have, I would like to know your thoughts.

Mr. WEIDENBAUM. I have not.

Representative HAMILTON. Mr. Eckstein.

Mr. ECKSTEIN. Well, again, that requires an assessment of whether you really need the MX, the B-1, the attack helicopters, the carriers, the troop carrier, the tank; and I think what we really need is some other method of review which will assure the American people that the weapons systems we undertake really have merit.

I cannot tell you that if you cut the defense budget by x billion dollars that this will create some miracle in the private economy. All I can tell you is we are planning for a lot of defense and we have not really developed an economic policy to fully take care of it.

JUDGMENTS ABOUT DEFENSE SPENDING

Representative **Hamilton**. Let me ask you about the—I guess the system by which we make these judgments about defense spending. If you are going to answer the question, how much is enough; then you have to ask yourselves what America's needs are in the defense area. Both of you have had a considerable amount of experience in the Government and the way that it operates. What is your judgment about the system by which we make our judgments with regard to defense spending? Do you see major weaknesses in that system? Is it a system that can produce good, sound judgments about defense spending or is it a system that cannot produce those judgments?

Mr. **Eckstein**. I think we have never had a situation that we have today where the media reports so many questions about the individual weapons systems. The public has never been involved in the degree of detail that we have today. So I do believe the defense establishment has a major problem of credibility.

Now the one major historical episode where we tried to change the method of weapons system evaluation was under then Secretary of Defense McNamara, especially under President Kennedy, where the Secretary tried to take away the play from the military services and really tried to tell them what to do. Of course, we remember the plane—what was it called—the FX, which they tried to jam down the throats of the military and they ultimately defeated the Secretary. So the one episode of attempting to get a system outside of that within each military branch looking out for its own weapons and trying to use only its own and share as little as possible with the other services was essentially defeated.

So it would take very, very strong leadership. You need the kind of leadership we had hoped for when Secretary Weinberger was appointed that would invent a new system that would reestablish the credibility of this weapons evaluation process, would not leave it entirely in the hands of each military branch without running into the kind of situation that McNamara ultimately ran into.

Mr. **Weidenbaum**. I think there are two levels at which some strengthening of the existing machinery is necessary, although I think the fundamental machinery in place is correct. One is at the National Security Council level where earlier this year we saw what I found to be a very constructive change. That is the establishment of an international economic coordinating group within the NSC framework so that economic and foreign policy decisions could be integrated and especially the economic aspect of foreign policy decisions reviewed in the context of political aspects.

I see a parallel here with the defense part of the NSC mandate and the need for establishing a comparable economic committee within the

NSC framework, so that economic considerations can be brought into play during the policy formulation process in a more formal and a more comprehensive way than has been the case.

Second, there is, of course, the key role of OMB. So much depends on the specific people in OMB topside and at the support level people who are very knowledgeable on defense matters and whose opinions are given proper weight during the time the President is putting together his budget. Again, that is subjective and judgmental, but I see the need for shoring up both of those mechanisms, the NSC and OMB.

Mr. **Eckstein**. Could I add one other area?

Representative **Hamilton**. Surely.

Mr. **Eckstein**. General Jones in his retirement recommendations recommended a strengthening of the Joint Chiefs to provide at least some overall military viewpoint on the individual services and his recommendations made a lot of sense to me.

STRENGTHENING THE INDUSTRIAL BASE IN ORDER TO HANDLE THE DEFENSE BUILDUP

Representative **Hamilton**. Both of you have referred to the necessity of strengthening the industrial base so that you can handle the defense buildup. Is there any evidence now that the major defense contractors and suppliers are making the kinds of investment in plant and equipment that they are going to need to handle this buildup?

Mr. **Weidenbaum**. First of all, I make a distinction between the prime contractors and the first, second, and third tier subcontractors. I think in general there is more than adequate capacity in the years ahead at the prime contractor level. I do think one of the constructive aspects of the current program is multiyear procurement which not only signals to companies what the future market is, but gives them a basis for making those investments. I have fragmentary knowledge only of some increases in the works in the capacity of key subcontracting industries where the capacity in the outyears could present bottlenecks. So I think, very frankly, the public airing that this subcommittee has had in the past and some of the work that we have been doing has a very positive result in terms of increasing the Pentagon's awareness of the need to respond to your concern.

Mr. **Eckstein**. Well, the recession is creating havoc with industrial investment in this country. Investment fell very substantially in 1982. It will fall again very substantially in 1983, and that does include to a degree people like semiconductor manufacturers, airplane manufacturers, people right across the industrial spectrum.

I believe every industry is currently looking for declining investment next year and that does damage the prospect for an industrial base for the 1987–88 time frame. I do not know what you can do about it except try to get the economy going.

Representative **Hamilton**. With this huge increase in defense expenditures coming along, are not they gearing up for it? I would think in these particular industries they would be cranking up on plant and equipment so they can handle this.

Mr. **Eckstein**. I am sure some are, but business in this country is fairly shortsighted and the earnings pressure quarter by quarter is great and the financing is difficult and what have you. So the fact that they are now earning so little in their civilian business——

Representative HAMILTON. What is the matter? Do not they actually believe these things are going to come about, these big increases? I mean, we can identify the major really huge defense contractors. There are not all that many of them in the country. They know that the major increase in the defense budget is going to be in the procurement area. They know what those procurements are going to be in general terms. Are not they cranking up. Cannot you begin to see the buildup occurring?

Mr. ECKSTEIN. I think you have to ask them yourself which, of course, you can easily do, but I am sure that to the extent they know what is coming they are making reasonable plans. Nobody has ever really questioned their ability to plan their own affairs.

Representative HAMILTON. But you do not really see it.

Mr. ECKSTEIN. But their overall lack of financial success at the moment based as much on the lack of civilian aircraft sales as anything else does pose a companywide restraint on capital spending. While they are obviously going to meet the most immediate needs, as you get a little bit away from the very specific facility that makes the final missile or the final plane, you get into a looser area where military and civilian purposes are not so clearly separated.

Representative HAMILTON. You draw the same distinction Mr. Weidenbaum does between the primary and the secondary contractors?

Mr. ECKSTEIN. Yes; I think you can do that, although the financial problems are at all levels and they grow out of the civilian economy not out of the military budget.

Mr. WEIDENBAUM. But, Otto, I suggest that the excess capacity for the prime contractors, especially aerospace primes, is an order of magnitude greater than for the subcontracting industries typically.

Mr. ECKSTEIN. Well, I am thinking of the semiconductor industry which is one which has been surrendering its market to Japan because they underinvested. Well, what are they going to do in 1982 and 1983? They are going to compound those mistakes because they have not the money and the market is not so good in the short run and in the end we will end up buying semiconductors from Japan for the military systems. That is not going to be too helpful to us.

Representative HAMILTON. Is that a pattern you see in defense spending generally, that we are going to be more and more dependent on foreign sources for key elements of our defense production? You mentioned that, I think.

CHANGING IMPORT DEPENDENCE OF DEFENSE INDUSTRIES

Mr. WEIDENBAUM. Table 3 of my prepared statement draws on the Commerce Department study which shows a comparison of their estimate of 1985 with 1979. It shows in general—now this is compiled from a much bigger study. This is a list of those industries where the import dependence is expected to increase. There are many other industries that are in the full Commerce Department report, but that is a good size list.

Representative HAMILTON. Yes.

Mr. WEIDENBAUM. It is not universal, but it is visible.

ECONOMIC RECOVERY EXPECTATIONS, 1983 AND 1984

Representative HAMILTON. I suppose I ought to ask both of you your general impressions about the economy recovery in the next couple of years. Could you just recite that for me before we conclude here? What do you expect in 1983 and 1984 in terms of economic recovery?

Mr. ECKSTEIN. Well, there is no evidence of recovery as yet outside of the housing area. The economy is probably still declining. Business investment will be down very sharply next year. We are counting on a little pick up in housing and some small recovery in automobiles and some end to inventory correction to produce a very low growth rate for next year.

Representative HAMILTON. At what figure?

Mr. ECKSTEIN. Our current figure is 2.2 percent. I think our next forecast we will have to lower that once more.

Representative HAMILTON. When does that next forecast come out?

Mr. ECKSTEIN. About 2 weeks, before year end. And it is just a reality that Christmas sales turn out not to be so good after all. Income growth will be nil for the next couple months because we have a few little excise taxes going up on January 1. There is really not much happening there except really the housing pick up.

Representative HAMILTON. We may need more than a policy twist, do you think?

Mr. ECKSTEIN. Well, this is another subject. My own belief is that the economy needs a major push in the very short run to make sure that some kind of recovery starts. All bets are off if this keeps on dragging on month after month after month.

Representative HAMILTON. You do not worry about the deficit then?

Mr. ECKSTEIN. Then worry about the deficit in 1984. The 1983 deficit is a lost cause anyway and it will be financed because there is a little private credit need. It is really the problem of getting the turnaround in the real economy in the next few months so you get on a trajectory of improvement both from a psychological point of view for businesses and families, financial point of view, and just to get the economy back on the track in terms of investment and all the things we usually expect.

So we know, of course, that the deficit is another problem and in the long run it is the central problem. We must deal with that deficit once the recovery is underway, and that does take tough decisions on spending and taxes. But there is another problem which nobody wants to face up to and they have walked away from it except in a kind of cosmetic way, and that is that the turnup is not here and you cannot sit here forever just watching it and hoping and praying it will come. To me the risks now are so great on the downside that if I were in authority I would use a quick fix. I would lower interest rates another sizable chunk. I would even accelerate the tax cut. I would even pass a jobs bill.

Representative HAMILTON. You would accelerate the tax cut?

Mr. ECKSTEIN. Yes; I would accelerate the tax cut because that is the only measure that is really sizable and available and is guaranteed to stop because it will happen anyway on July 1. It is just 6 months worth.

Representative HAMILTON. So our $180 or $200 billion deficit becomes $250 billion deficit.

Mr. ECKSTEIN. In 1983 even a figure in the low $200's does not frighten me because nothing else is happening. For 1984–85 it worries me a great deal. But you have to really draw a distinction here between the immediate need of the economy and this deeper longrun problem.

Mr. WEIDENBAUM. I have been projecting real growth in 1983 in the 2- to 3-percent range on the assumption of significant growth in the money supply and I think that is the area to sensibly expect that impetus for the recovery to come. We need, however, to avoid just a call for an easy money policy. That I think would be counterproductive. In other words, we always have to be concerned about the potential inflationary effects for very real reasons, not because of stirring up inflation in 1983—I don't see any significant likelihood of that—but because of the feedback effects on interest rates, long-term interest rates, real interest rates. That is the concern of the first half of my testimony. I think the only way that the significant monetary growth that I envision for 1983 can occur constructively is if the Congress and the executive branch take the strong actions on the future spending stream, on the future deficits, that will signal to financial markets that it is not business as usual. We have just gone through a difficult period to unwind an escalating inflation. I do not think we should throw those gains away. That is why I call it a carefully crafted twist.

Representative HAMILTON. As I understand Mr. Eckstein's testimony, one of his major points is that by increasing defense spending while cutting taxes we have in effect raised the defense bill without asking the public to pay for it. To what extent has this contributed to the deficit in 1981 and 1982?

Mr. ECKSTEIN. Well, so far, it is a small part of the story. It depends on what you take as your base defense. Defense is up, but so far you are in the early stage of it.

Representative HAMILTON. It has not been a significant contributor?

Mr. ECKSTEIN. No; so far the deficit is mainly due to the continued thrust of the old civilian spending which has not been cut off but——

Representative HAMILTON. Is it possible that our failure to finance the defense bill has already begun to shift our economic priorities by contributing to the deficits, the high interest rates and the resultant reduction of overall economic activity or is the loss of potential GNP growth something that has not yet occurred?

Mr. ECKSTEIN. We have not really hit the point where all these chickens come home to roost. So far we are really living with another set of problems created by other factors in the past.

Representative HAMILTON. Well, gentlemen, it is a pleasure to hear both of you. I apologize for the interruption we had, but it is refreshing to hear your testimony. We thank you for it.

The subcommittee stands adjourned.

[Whereupon, at 11:55 a.m., the subcommittee adjourned, subject to the call of the Chair.]

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